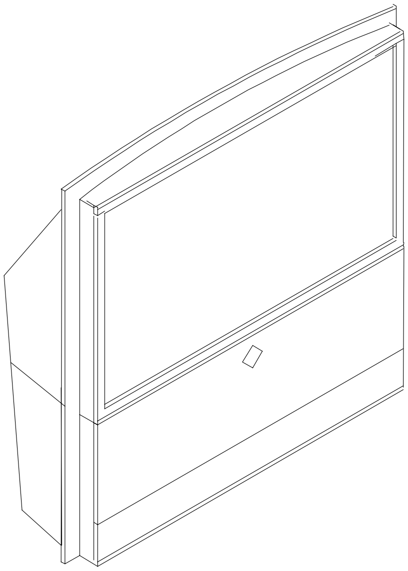
2003

MITSUBISHI ELECTRIC

Service Manual



LIQUID CRYSTAL ON SILICON PROJECTION TV
V23L CHASSIS

MODEL
WL-82913

CAUTION:

Before servicing this chassis, it is important that the service person read the "SAFETY PRECAUTIONS" and "PRODUCT SAFETY NOTICE" contained in this manual.

SPECIFICATIONS

- **Power Input** : AC 120V, 60Hz
- **Power Usage** : 380W
- **Light Engine** : 3 Liquid Crystal on Silicon ICs (LCOS)
- **Light Source** : 200W
- **Frequency Range** : VHF 54 ~ 470MHz
  UHF 470 ~ 806MHz
- **Antenna Input** : VHF/UHF 75Ω unbalanced
  2 - NTSC
  1 - ATV/QAM
- **Cabinet Dimensions**
  83.25""(W) x 73.75"(H) x 29.3"(D)
- **Weight** : 519 lbs
- **Speakers (8 Ohms 10W)**
  : 2-5"x7" oval 10W midrange speakers
  : 2-1.5" round 10W tweeters
- **Input Level** : VIDEO IN JACK (RCA Type)
  1.0Vp-p 75Ω unbalanced
  : AUDIO IN JACK (RCA Type)
  -4.7dBm 43kΩ unbalanced
  : S-VIDEO IN JACK
  (Y/C separate type)
  Y:1.0 Vp-p C:0.286Vp-p(BURST)
  75Ω unbalanced
  : COMP / Y, Cr, Cb (RCA Type)
  Y: 1.0 Vp-p Cr, Cb: 700mVp-p
  : ATV / Y(G), Pr(R), Pb(B), H, V
  Y: 1.0Vp-p with sync 75Ω (BNC)
  Pr, Pb: 700mV 75Ω
  H, V: 3.0Vp-p 75Ω
  : VGA / R,G,B,V,H (15 pin D)
- **Output Level** : VIDEO OUT JACK (RCA Type)
  1.0Vp-p 75Ω unbalanced
  : AUDIO OUT JACK (RCA Type)
  -4.7dBm 4.7kΩ unbalanced
- **Digital Interface** : IEEE-1394 I/O Jacks
  : AC-3 Digtal Audio Output
  : MonitorLink™/DVI
  : MonitorLink™ Control/RS-232C
  : 4 Memory Card Reader Inputs

- Design specifications are subject to change without notice.

MITSUBISHI DIGITAL ELECTRONICS AMERICA, INC.
9351 Jeronimo Road, Irvine, CA 92618-1904

Copyright © 2003 Mitsubishi Digital Electronics America, Inc.
All Rights Reserved

CONTENTS

INTRODUCTION 5

PRODUCT SAFETY NOTICE 5

SAFETY PRECAUTIONS 6

TV DELIVERY & INSTALLATION
- Cabinet Assembly 7
- Diamond Shield™ Installation 9
- Arc Assembly Installation 10

USER MAINTENANCE
- Dust Filter Cleaning 12
- Lamp Cartridge Replacement 13

LAMP TROUBLESHOOTING PROCEDURE 15

DISASSEMBLY PROCEDURES
- Cabinet Front Disassembly 16
- Cabinet Rear Disassembly 17

SERVICING THE DIFFUSER SCREEN AND FRESNEL LENS
- Removal of the Diffuser Screen and Fresnel Lens 18
- Installation of the Diffuser Screen and Fresnel Lens 18

LIGHT BOX OPERATION (Out of the cabinet)
- Control Light Box Operation (KIT-RECEIVER-82913) 19
- Enabling Turn On 19

SERVICING PCBs
- Accessing the Chassis Removal 20
- PCB Locations 20
- DM Module Replacement 21

ELECTRICAL ADJUSTMENTS
- Equipment and Initial Setup 22
- Default Settings 22
- A/V Reset Defaults 23
- A/V Reset 23
- LED Indicator Diagnostics 23
- Remote Control Operational Mode 24
- Circuit Adjustment Mode 25
- Service Mode Reset 26
- On-screen Display Position Mode 26
- E2PROM Replacement 26
- Adjustment Items List 26
- Adjustment Procedures
  - Test Point Locations 27
  - Main / Sub Y Level & & HV Regulation 28
  - On-screen Display Position 29
  - Horizontal & Vertical Position 30

Optical Adjustments
General Adjustment procedure 31
Operational Preparation 31
Selecting and Internal Test Signal 32
Picture Rotation Adjustment 33
Vertical Trapezoid Distortion Adjustment 33
Horizontal Trapezoid Distortion Adjustment 34

CHIP PARTS REPLACEMENT **35**

REPLACEMENT PARTS
Parts Ordering 36
Critical and Warranty Parts Designation 36
Parts Tolerance Codes 36
Quick Reference List 37

SERVICE PARTS LIST **38**
SCREEN ASSEMBLY PARTS LIST **48**
CIRCUITRY BLOCK DIAGRAMS **49**

Part 2
Schematic Diagrams

CONTENTS **Page**

SCHEMATIC DIAGRAMS
PCB INTERCONNECT DIAGRAM S1
PCB-POWER / SUB-POWER S2
PCB-TERMINAL -1 .... S3
PCB-TERMINAL 2 .... S4
PCB-SIGNAL-1 (MICRO) S5
PCB-SIGNAL-2 (TUNER-AUDIO) S6
PCB-MLINK /E2P S7
PCBs-CONTROL / FRONT / PREAMP / CONNECT S8
PCB-TUNER DTV S9
PCB-DEMODULATOR S10

PCB LAYOUT DIAGRAMS **11**

INTRODUCTION

This service manual provides service instructions for PTV Models WL-82913 which uses the V23L chassis. Service personnel should read this manual thoroughly before servicing this chassis.

This service manual includes:

1. Assembly and disassembly instructions for the front and rear cabinet components.
2. Servicing of the Diffuser Screen and Fresnel Lens.
3. Servicing printed circuit boards (PCBs).
4. Electrical adjustments.
5. Optical Adjustments
6. Chip parts replacement procedures.
7. Circuit path diagrams.

The parts list section of this service manual includes:

1. Cabinet and screen parts.
2. Electrical parts.

Schematic and block diagrams of the above listed model are included in this service manual for better understanding of the circuitry. PCB drawings are also included for easy location of parts and test points.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have special safety characteristics are identified in this service manual.

Electrical components having such features are identified by shading on the schematic diagram and by bold type in the parts list of this service manual. **Therefore, the replacement for any safety part should be identical in value and characteristics.**

SAFETY PRECAUTIONS

NOTICE: Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

WARNING:

1. Operation of this receiver outside the cabinet or with the cover removed presents a shock hazard from the receiver's power supplies. Work on the receiver should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment.
2. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage area. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

Leakage current check

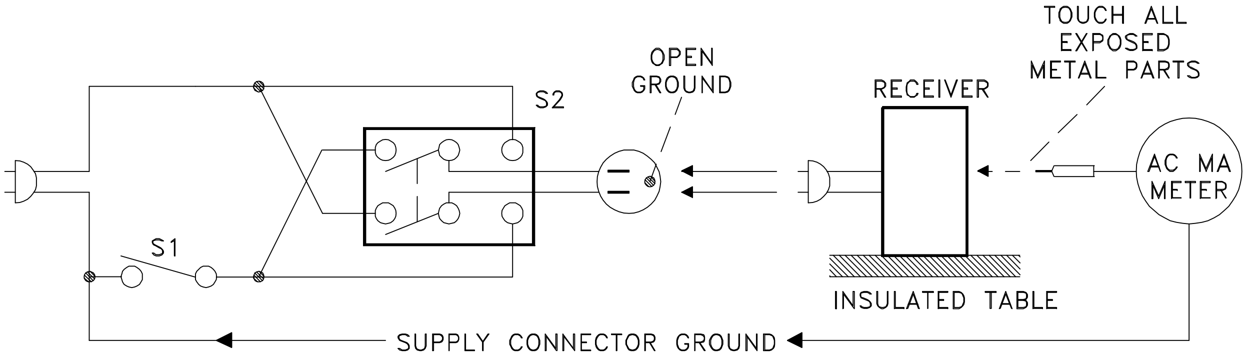
Before returning the receiver to the customer, it is recommended that leakage current be measured according to the following methods.

1. Cold Check

With the alternating current (AC) plug removed from the AC source, place a jumper across the two AC plug prongs. Connect one lead of an ohm meter to the AC plug and touch the other lead to each exposed metal part (i.e. antennas, handle bracket, metal cabinet, screw heads, metal overlay, control shafts, etc.), particularly any exposed metal part that has a return path to the chassis. The resistance of the exposed metal parts having a return path to the chassis **should be a minimum of 1Mega Ohm**. Any resistance below this value indicates an abnormal condition and requires corrective action.

2. Hot Check ...Use the circuit shown below to perform the hot check test.

1. Keep switch S1 open and connect the receiver to the measuring circuit. Immediately after connection, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2.
2. Close switch S1, energizing the receiver. Immediately after closing switch S1, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2. Repeat the current measurements of items 1 and 2 after the receiver has reached thermal stabilization. **The leakage current must not exceed 0.5 milliampere (mA).**



TV Delivery and Installation

For Mitsubishi Dealers and Service Personnel Only

The WL-82913 Cabinet has four pieces, consisting of:
TV (two packages)
Diamond Shield (see following pages for assembly instructions)
Arc (see following pages for assembly instructions)

IMPORTANT

This projection television weighs over 500 pounds and has many sensitive components. Any assembly or dismantling procedure should be done by authorized Mitsubishi dealers or service personnel ONLY.

Assembly or dismantling should be done by at least 2 people.

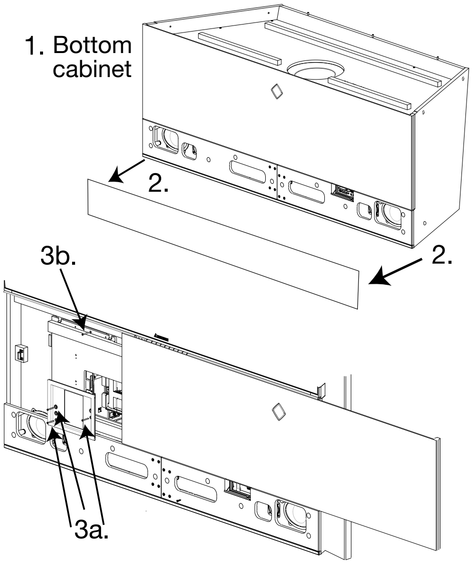
This TV is very heavy! Exercise extreme care when moving TV as foreign material may become embedded in the castor wheels which could damage wood or other delicate flooring.

Cabinet Assembly

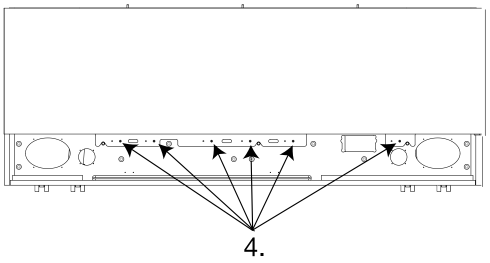
1. Carefully remove the bottom cabinet from the packaging and place at desired location on a level floor. Tilting the cabinet can also tilt the lamp cartridge, which may reduce the lamp's life.

2. Carefully remove the speaker grille from the bottom assembly by pulling out each side and temporarily place aside.

3. Carefully:
 a. Slide the glossy front panel open and remove the three (3) screws securing the plastic lamp cover. Place screws and cover aside.
 b. Remove the front panel assembly top screw located on the top wooden flange above the top track, and set aside.

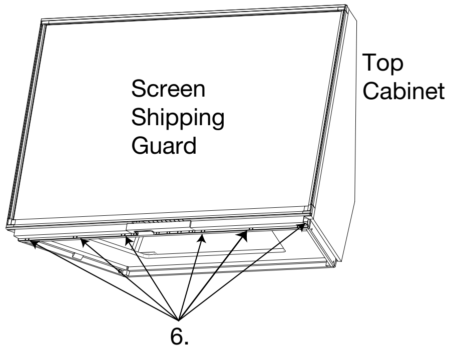


4. Carefully remove the glossy front panel by slightly sliding the panel closed and then removing the six (6) screws located on the bottom wooden flange below the bottom track. Slide the panel open 3" and then lift upward and swing out. Temporarily place aside. Note: Panel, tracks and track mounting come off the TV as one unit.

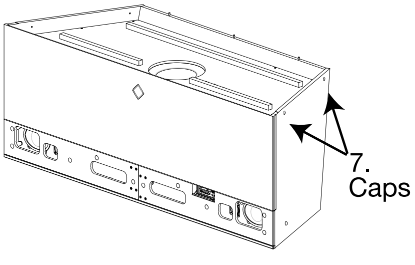


5. Carefully remove the top cabinet from the packaging and place on the floor next to the bottom cabinet.

6. Carefully remove the screen frame (with the cardboard screen shipping guard still attached) from the top cabinet by removing the six (6) screws under the screen frame. Gently angle the bottom of the front screen edge outward and lift upward to remove the frame. Temporarily place the screen frame assembly aside.



7. Remove the top two black glossy caps from each side.



8. Carefully lift the top cabinet onto the bottom cabinet by aligning the inside edge of the top cabinet to the inside edge of the bottom cabinet. KEEP FINGERS CLEAR OF ALL JOINTS DURING ASSEMBLY.

9. Insert the two top screws (from the accessory bag), on each side, securing the top back screw first. If you are installing the optional Arc Assembly, then slightly loosen (4 mm) the front top and bottom screws and place the black glossy caps only over the back screw. If you are not installing the Arc, tighten the front screw and replace both caps.

10. Carefully remove the Preamp board from the packaging bag and assemble to the bottom cabinet. Attach wiring by clicking the plastic wire harness together.

11. Remove the black plastic lens cap, to the left of the preamp board, by pulling the cap straight up and off.

12. Carefully lift the screen frame (including the cardboard screen shipping guard) into place. To secure the frame, the top should rest into the cabinet's metal brackets at the top, while the bottom is angled 45° outward. Swing the frame into place and gently push down starting at the center and working to the outside.
    Once in position, install the six (6) screws removed in step 6.

13. Connect the two lead wires from the screen frame's control panel to the bottom cabinet by clicking the two plastic wire harnesses together.

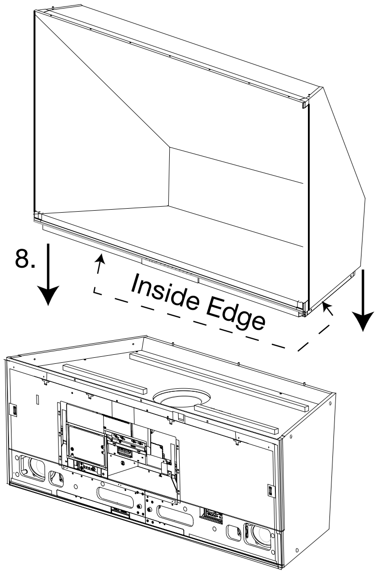
14. Carefully lift the glossy front panel into place. Slide the panel upward toward the screen frame and gently rest on the three dowel pins. Install the top screw removed in step 3b. Slide the front panel door closed. Install the six (6) screws removed in step 4.

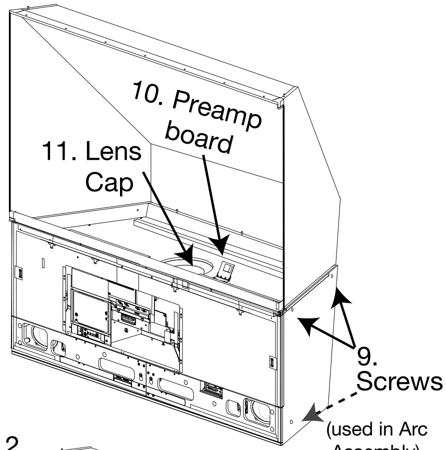
15. Carefully slide the front panel open and install the plastic lamp cover and the three (3) screws removed in step 3a.

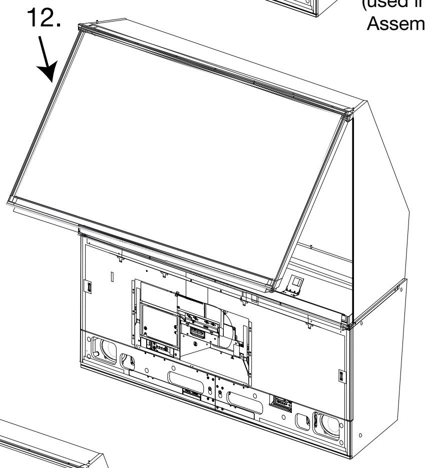
16. Install the speaker grill by pushing the plastic posts into the grommets. Speaker grille should only be installed by hand.

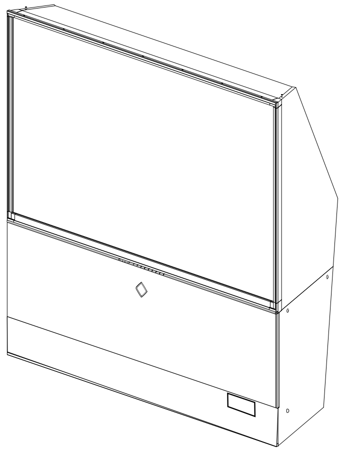
17. Remove the cardboard screen shipping guard from the front of the screen assembly by removing the tape around the frame.

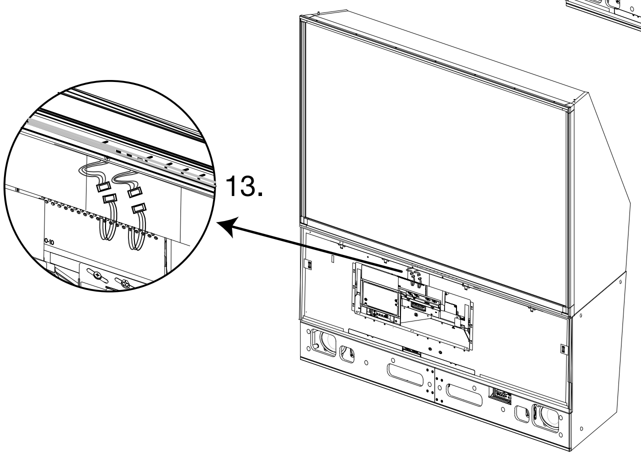
To dismantle this TV, please reverse the steps, starting with step 14.











DiamondShield™ Installation and Removal

Included in the Diamond Shield package are the following items:

(1) Diamond Shield with pre-installed molding clips

Because of the screen size, it is recommended that two people install or remove the Diamond Shield.

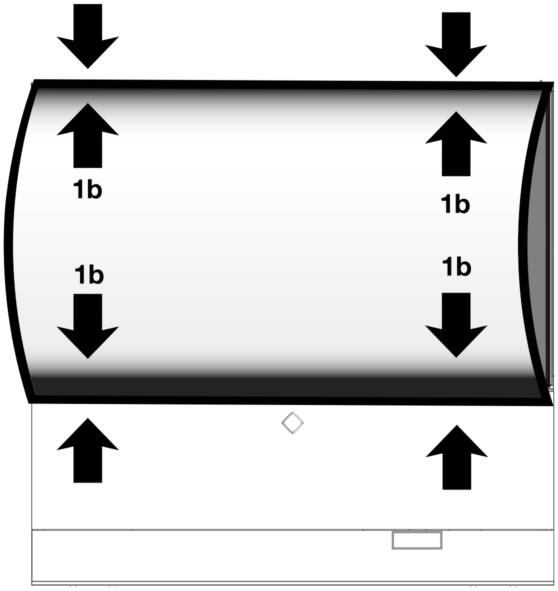
1. To Install the Diamond Shield:

a. While wearing soft cotton gloves, carefully remove the Diamond Shield from the protective packaging. Wipe off any dust with a lint-free cloth. Do not use any cleaners on the anti-glare Diamond Shield.

b. The bottom of the Diamond Shield has a Mitsubishi logo. With one person on each side of the Diamond Shield, begin by sliding this end into the bottom channel. Then, gently bow the shield toward you and insert the top edge into the top channel, under the silver trim on the frame.

c. The three molding clips on the left and right side will now snap into place. Begin by pressing the bottom corner clip into place. Do not force the clips.

This completes the Diamond Shield installation.

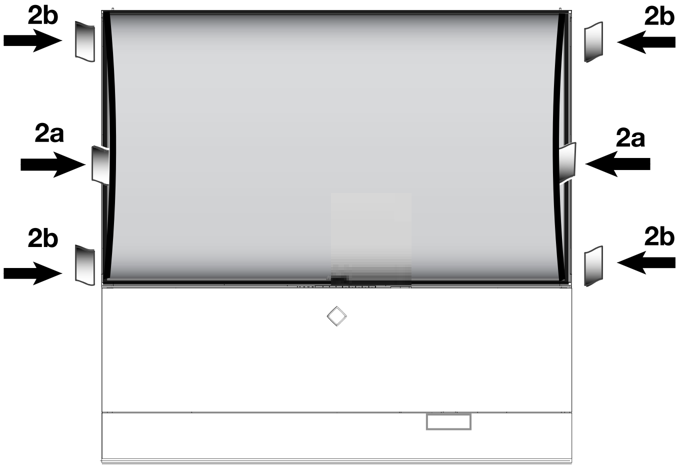


2. To Remove the Diamond Shield:

a. While wearing soft cotton gloves, loosen the middle left and right molding clips by pressing a small plastic card (the size of a standard credit card or a clean, plastic, putty knife) into the opening. The middle molding clip will disengage from its slot.

b. Next, loosen the top and bottom left and right molding clips, with the card or plastic putty knife. The entire molding clip will pop out. Do not force the clips.

c. With one person on each side of the Diamond Shield, press on the top edge until it comes out of the channel. Pull the screen up to remove it from the bottom channel. Store the Diamond Shield in its original packaging, if possible.



WARNING

Sharp edges! Always wear gloves to handle, lift, install and remove the Diamond Shield.

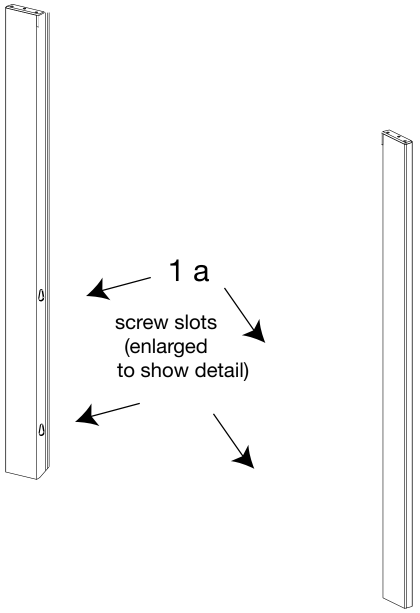
Arc Assembly Installation

NOTE: The use of the Arc Assembly is optional. It is an enhancement to the TV cabinet appearance.

The Arc for the WL-82913 should be assembled and installed after the Cabinet Assembly and Diamond Shield Installation. It is recommended that 2 people assemble this unit.

The Arc includes the following:

2 interlocking top pieces
2 leg pieces
8 screws
2 dowel pins



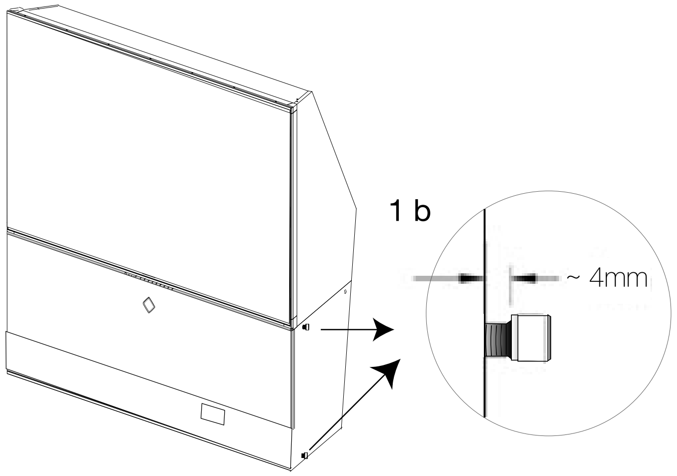
Arc Assembly and Installation

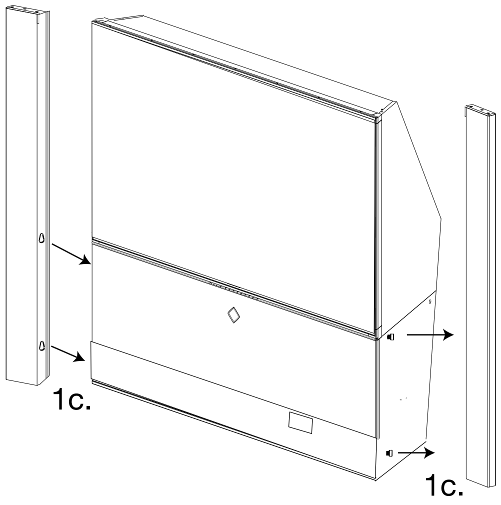
1. Arc Sides:

a. Note the location of the two screw slots on the inside of each arc assembly leg. These slots fit over the cabinet side front screws.

b. Remove the glossy caps and then loosen the two front screws, of the cabinet assembly. There should be at least 4mm of clearance between the screw head and the cabinet surface.

c. Carefully fit the Arc sides onto the TV. The screws on the TV will fit into the screw slots on the Arc .





2. Arc Top:

a. Fit the top two pieces together. These pieces interlock in the middle.

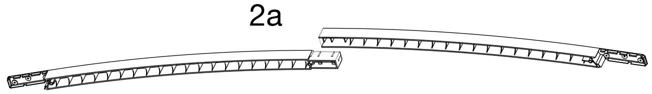
b. Insert two of the screws into this middle section from the bottom.

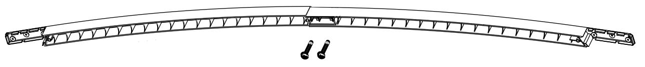
c. Remove the two dowel pins from the Arc accessories bag and install them on top of the cabinet.

d. Carefully place the assembled arc top piece onto the TV. The dowel pin alignment holes on the arc top will fit into the dowel pins. The arc top will snap into the arc sides.

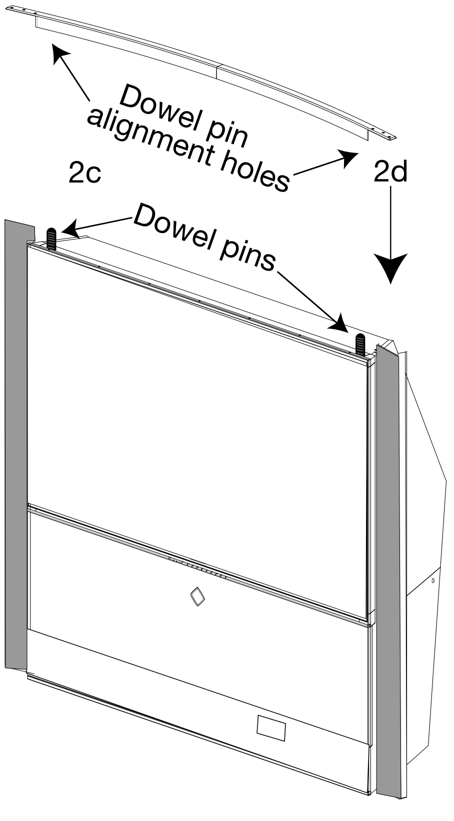
e. To secure the arc top to the arc sides, use the remaining six screws. The screws are inserted from the top, three on each side.

2a

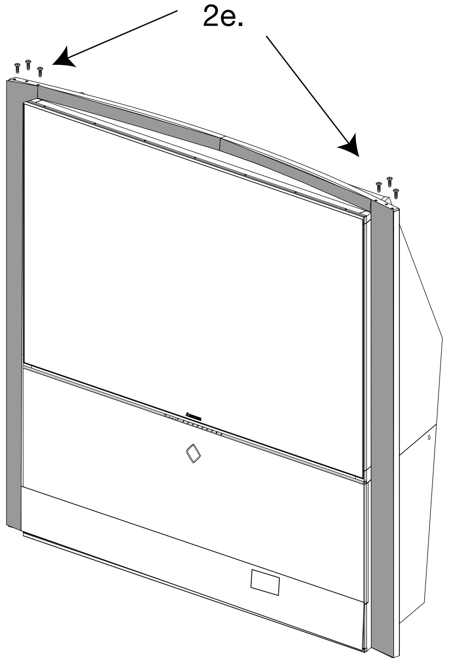




2b



2e.



Dust Filter Cleaning

Clean the filter annually and whenever you replace the lamp cartridge.

1. Turn the television off and unplug the AC cord.

2. Remove the cloth speaker grille by gently pulling out each side. Set the grille aside.

3. With a standard philips screwdriver, remove the two screws that hold the dust filter in place. These are located on each side of the tray handle (labeled PULL HERE).

4. Pull the filter tray out using the handle (labeled PULL HERE). The tray should slide out easily.

5. Clean the filter material by vacuuming with an appropriate dusting attachment.

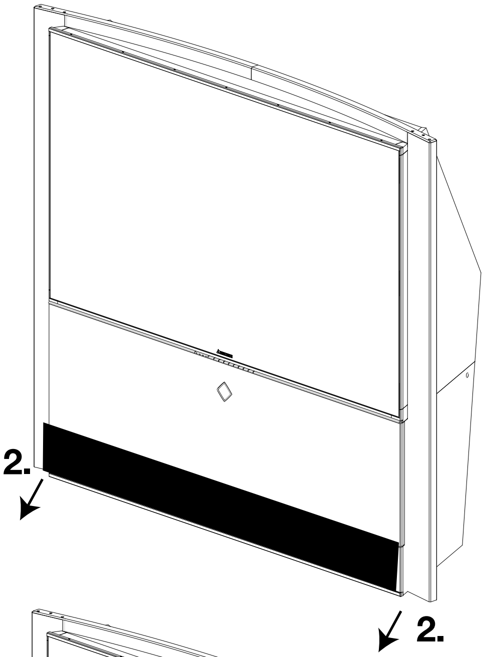
6. If the filter is soiled, you can remove it from the tray,
   a. remove the 5 plastic push pins that hold the filter, then
   b. pull the filter out from the plastic tabs that hold it in place.
   The filter can be rinsed. Do not use detergents or soap when cleaning the filter.

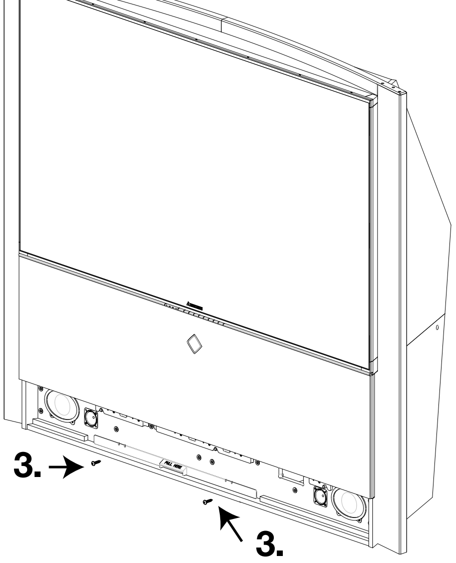
7. Completely air dry the filter before placing it back into the tray. Carefully fit the filter under the plastic tabs and install the 5 plastic push pins.

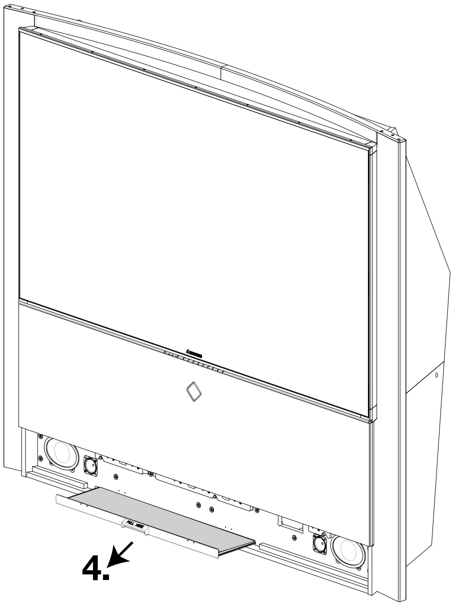
8. Slide the dust tray securely into place.

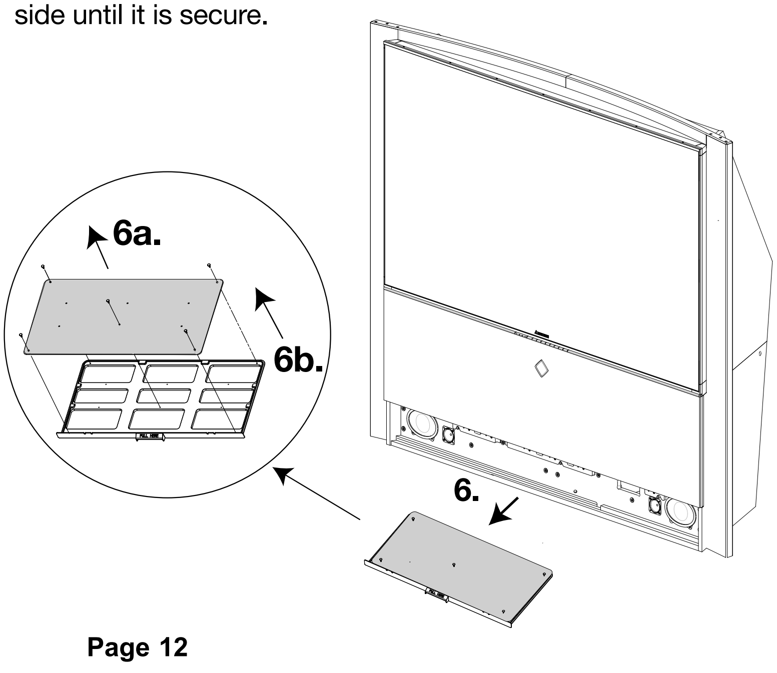
9. Secure with the two screws.

10. Snap the speaker grille back into place by pressing on each side until it is secure.









Lamp Cartridge Replacement

Before you replace the lamp cartridge please note the following:

CAUTION: If the television is on, press POWER to turn off and allow the television to cool for one hour before attempting to replace the lamp.

LAMP LIFE

The light source for the WL-82913 is a lamp. The actual life of the lamp in this television can vary, based on the lamp itself, the air temperature around the TV while it is operating, and your viewing patterns. Warmer air or poor ventilation shortens the lamp life, as does turning the television on and off frequently.

Mitsubishi warrants the lamp for one (1) year or 2,000 hours of operation, whichever occurs first. However, it is likely that the lamp will last significantly longer than this. When the lamp is close to 3,000 hours of use, the TV will display a warning message for one minute. The purpose of this message is to advise you that the lamp may fail soon. This warning message will continue to be displayed every time the TV is turned on, until the lamp is replaced and the Lamp Status elapsed time is reset.

At any time, you can confirm the lamp's elapsed hours of use by selecting Lamp Status from the Advanced Menu.

When you power on the TV, the message "Did you change the lamp? Press ENT(er) for Yes, press CANCEL for No" will appear. Press ENT(er) to reset the Lamp Status elapsed time.

To order a new lamp, please call (800) 553-7278.

WARNING:

Do not remove the lamp immediately after turning off the television. You may get burned because of the lamp's high temperature.

Do not remove the lamp, except when replacing. Careless treatment can result in injury or fire.

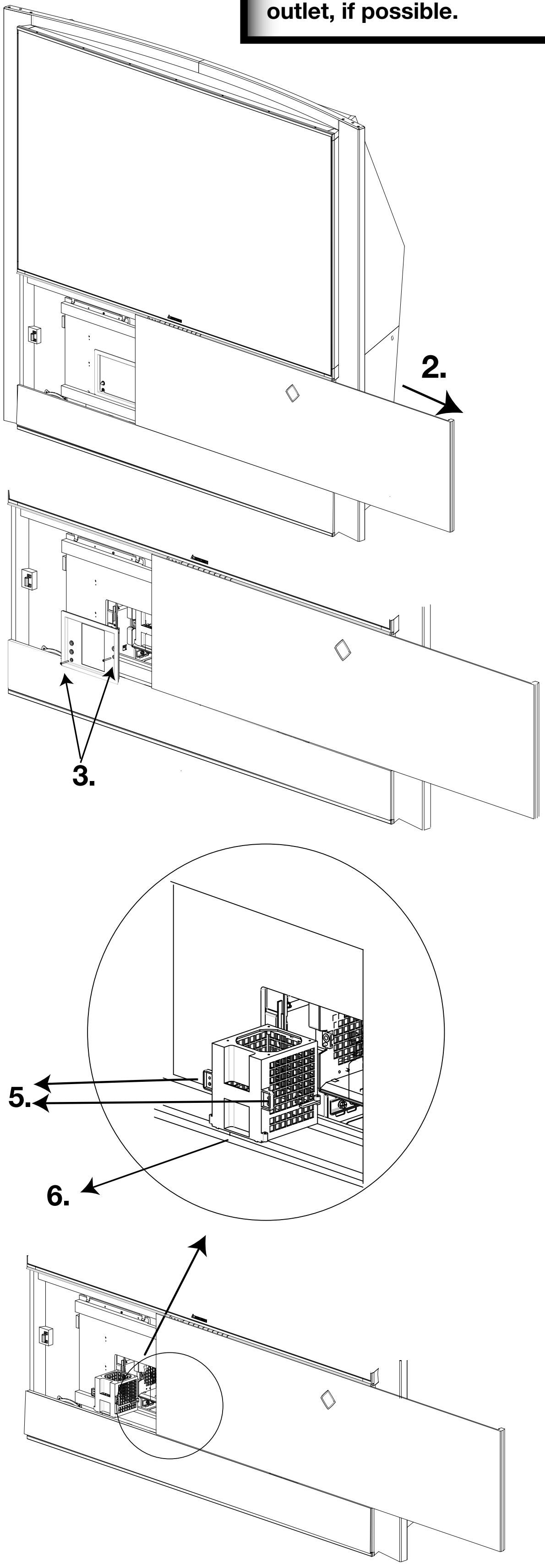
Do not touch the lamp element directly. It may break and cause you to have injuries or burns.

Be sure not to insert any metal or flammable object into the lamp cartridge opening, as it may cause fire or electrical shock. If any object is inserted into the opening unplug the AC cord of the TV and contact your dealer for service.

Install the lamp securely. Failure to do so may cause a fire.

The lamp in this product contains mercury. Disposal of mercury may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or the Electronic Industries Alliance: www.eiae.org

IMPORTANT
After powering off the TV, unplug the AC cord from the outlet, if possible.



Replacing the Lamp Cartridge

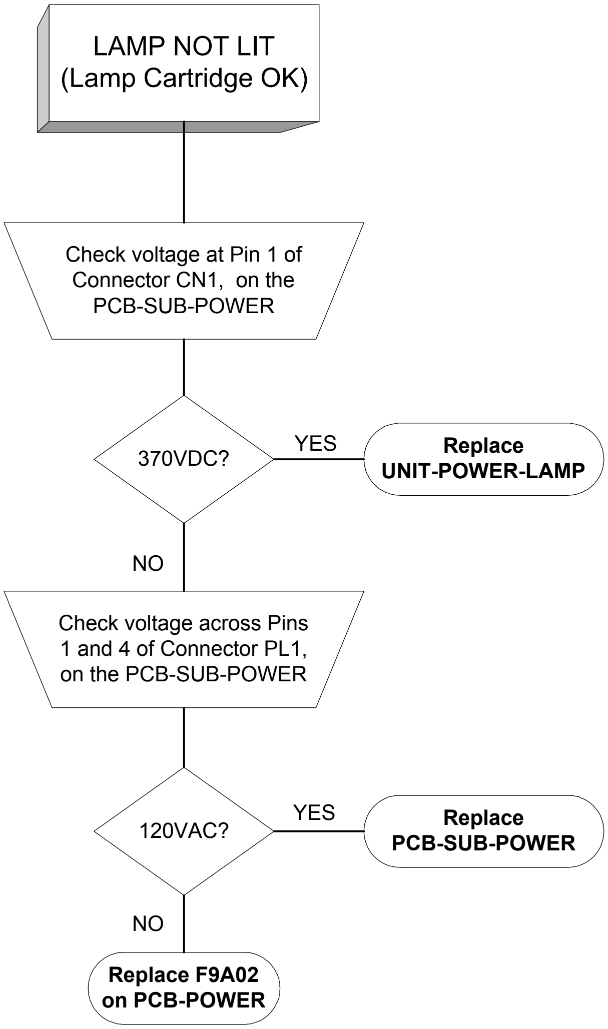
Whenever you replace the lamp cartridge also clean the filter.

1. Turn the television off and unplug the AC cord.
2. Carefully slide the glossy front panel to the right until it stops.
3. The lamp cartridge panel has a recessed plastic cover. Using a Phillips screwdriver, remove the three screws that hold this cover in place.
4. Remove the plastic cover and set aside with the screws.
5. After removing the cover, you will be able to see the lamp cartridge. Using a Phillips screwdriver, loosen the two screws on either side of the cartridge.
   NOTE: The two screws will not remove completely.
6. Gently grasp the center of the lamp cartridge and pull straight out, towards you.
7. Insert the new lamp cartridge securely into the TV. Do not touch the glass surface of the cartridge.
8. Tighten the screws on the lamp cartridge.
9. Replace the plastic cover and screws.
10. Carefully slide the glossy front panel to the left to close the panel.
11. Plug the power cord into the outlet and press POWER to turn on the TV.
12. When you turn on the TV's power, the message "Did you change the lamp? Press ENT(er) for Yes, press CANCEL for No" will appear. On the remote control, press ENT(er) to reset the Lamp Status elapsed time (appears on the Advanced Menu screen).

CAUTION: The glossy front panel fits very securely. Be careful not to pinch your fingers when sliding it.

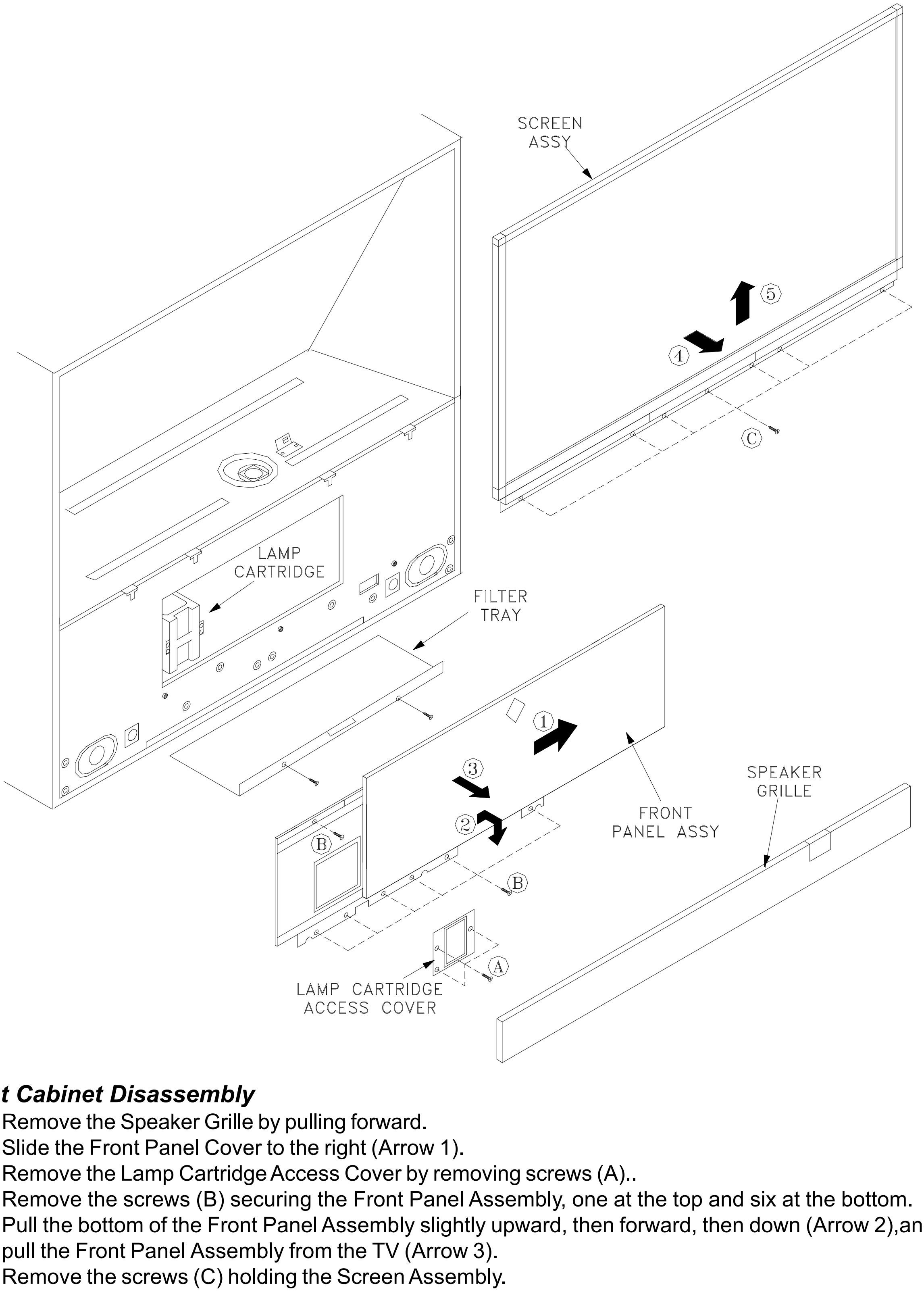
LAMP TROUBLESHOOTING PROCEDURE

If lamp replacement does not restore operation, use the following troubleshooting procedure.


LAMP NOT LIT
(Lamp Cartridge OK)
Check voltage at Pin 1 of Connector CN1, on the PCB-SUB-POWER
370VDC?
YES
Replace UNIT-POWER-LAMP
NO
Check voltage across Pins 1 and 4 of Connector PL1, on the PCB-SUB-POWER
120VAC?
YES
Replace PCB-SUB-POWER
NO
Replace F9A02 on PCB-POWER

CABINET DISASSEMBLY (FRONT VIEW)

***Refer to the Parts List for Part Numbers**


SCREEN ASSY
5
4
C
LAMP CARTRIDGE
FILTER TRAY
1
3
2
B
B
SPEAKER GRILLE
FRONT PANEL ASSY
A
LAMP CARTRIDGE ACCESS COVER

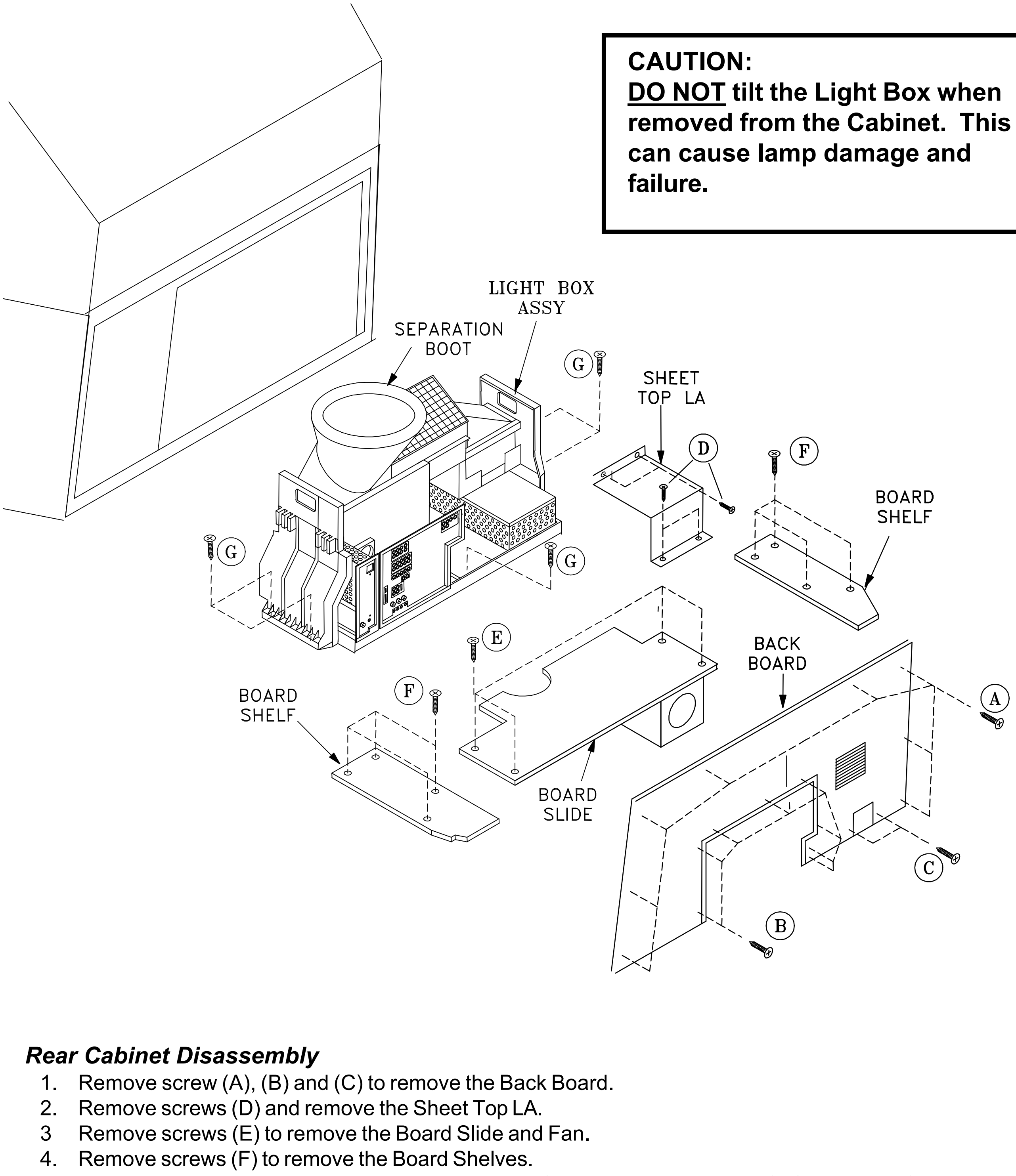
Front Cabinet Disassembly

1. Remove the Speaker Grille by pulling forward.
2. Slide the Front Panel Cover to the right (Arrow 1).
3. Remove the Lamp Cartridge Access Cover by removing screws (A)..
4. Remove the screws (B) securing the Front Panel Assembly, one at the top and six at the bottom.
5. Pull the bottom of the Front Panel Assembly slightly upward, then forward, then down (Arrow 2),and then pull the Front Panel Assembly from the TV (Arrow 3).
6. Remove the screws (C) holding the Screen Assembly.
7. Pull the bottom of the Screen Assembly slighty towards the front (Arrow 4) and uplug the cables from the Control Panel.
8. While holding the bottom of the Screen Assembly away from the TV; lift the assembly upward to remove from it from the cabinet (Arrow 5).

CABINET DISASSEMBLY (REAR VIEW)

***Refer to the Parts List for Part Numbers**

CAUTION:
DO NOT tilt the Light Box when removed from the Cabinet. This can cause lamp damage and failure.


LIGHT BOX ASSY
SEPARATION BOOT
G
SHEET TOP LA
D
F
BOARD SHELF
G
G
E
BACK BOARD
A
BOARD SHELF
F
BOARD SLIDE
C
B

Rear Cabinet Disassembly

1. Remove screw (A), (B) and (C) to remove the Back Board.
2. Remove screws (D) and remove the Sheet Top LA.
3 Remove screws (E) to remove the Board Slide and Fan.
4. Remove screws (F) to remove the Board Shelves.
5. To remove the Light Box Assembly, the Lamp Box Cover must be removed (refer to page 7).
6. Remove screws (G) holding the chassis and Light Box Assembly.
7. Be certain that all cables and connectors between the Light Box Assembly and external items are disconnected (e.g. speaker plugs, etc.), including the USB and 1394 connectors from the Card Reader to the DM Module.
8. Slide the Light Box Assembly from the cabinet.

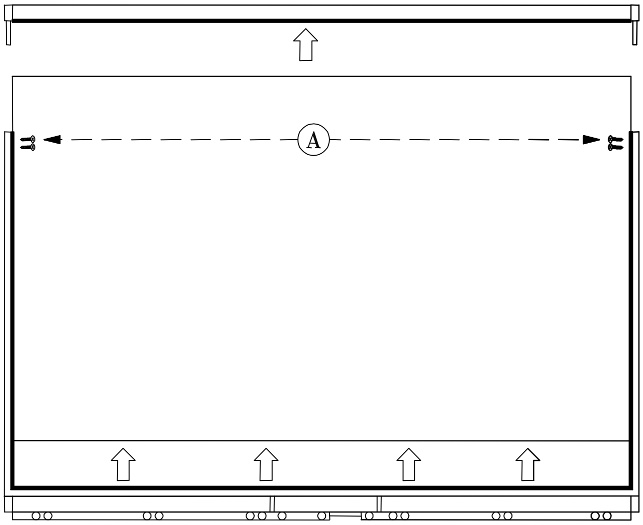
SERVICING THE DIFFUSER SCREEN AND FRESNEL LENS

CAUTION: **Wear gloves** when handling the Diffuser Screen and Fresnel Lens. This prevents cuts and finger prints. **Do not place Fresnel Lens in the sun**. This may cause fire and heat related injuries.

Diffuser Screen and Fresnel Lens Removal

1. Remove the screen assembly shown in the Cabinet Disassembly procedure.
2. Remove the four screws (A) to remove the Screen Frame Top.
3. Carefully slide the Diffuser Screen and Fresnel Lens combination from the Screen Frame assembly.

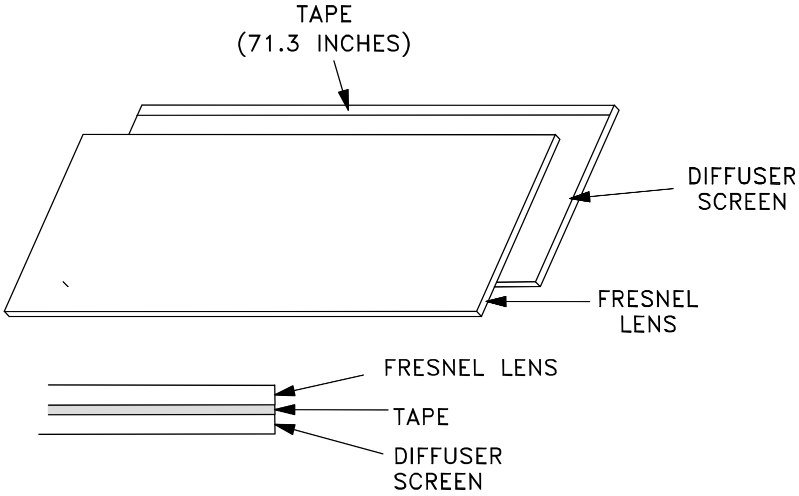
Note: When separating the Diffuser Screen from the Fresnel Lens, use caution while prying the Screen and Lens apart. Use a slot type screw driver, and remove the pressure sensitive double sided tape.



Diffuser Screen and Fresnel Lens Installation.

Note: Store the Diffuser Screen and Fresnel Lens in a cool dry place. High humidity may deform the Diffuser Screen and Fresnel Lens.

1. Apply 71.3 inches of double coated tape (Part # LENS-TAPE) along the top rear edge of the Diffuser Screen as shown below.
2. Place the Fresnel Lens on top of the Diffuser Screen and apply pressure at the top edge to bond them together as shown below.
3. Reverse the Screen Removal procedure an insert the screen in the Screen Frame Assembly.



LIGHT BOX OPERATION (Outside the cabinet)

Light Box Removal

Besides removing the Lamp Cartridge Access Cover and the items shown of page 8, several connectors have to be disconnected to remove the Light Box Assembly. **Note:** The Lamp Cartridge Access Cover must be re-installed after the Light Box has been removed.

ES connector ... Speakers
RF connector ... Preamp & Control Panel
LS connector ... Control Panel
CE connector ... Front Inputs
1394 & USB connectors ... Card Reader
EX-F ... Exhaust Fan

CAUTION: Only operate the Light Box with the Lamp in it's normal vertical position.

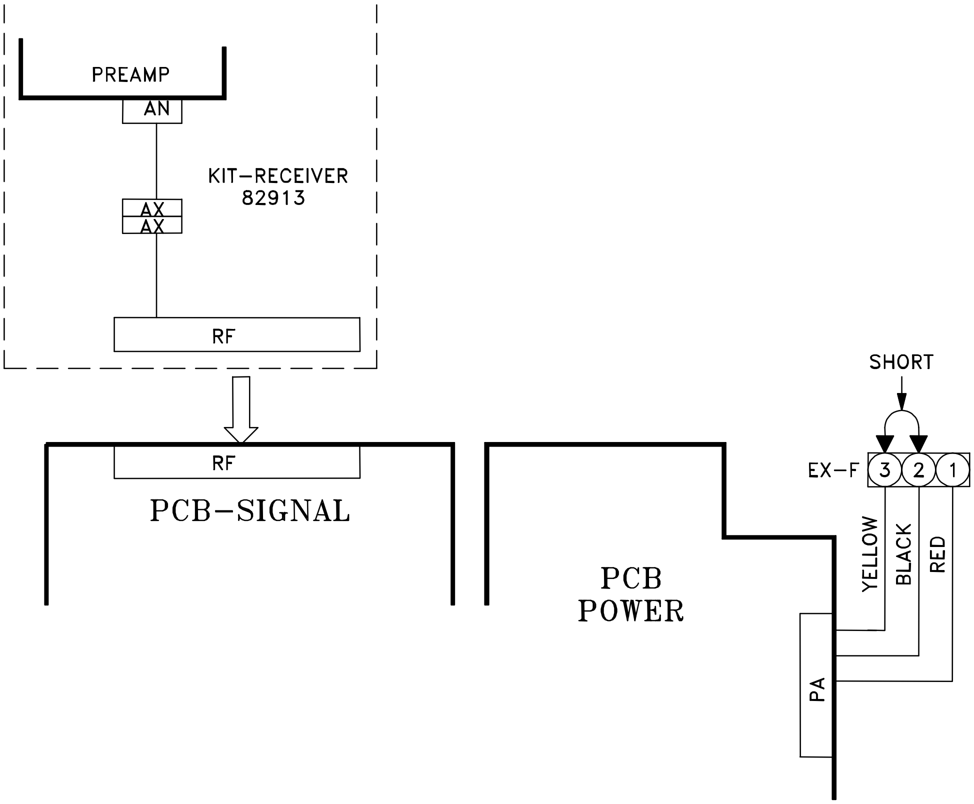
Out of Cabinet Operation

To Control Light Box Operation:

Servicing Kit (part # KIT-RECEIVER 82913) must be used. The kit consists of two cables and a Remote Preamp PCB. The diagram below illustrates the kit connection to the Light Box Assembly.

To Enable Turn On:

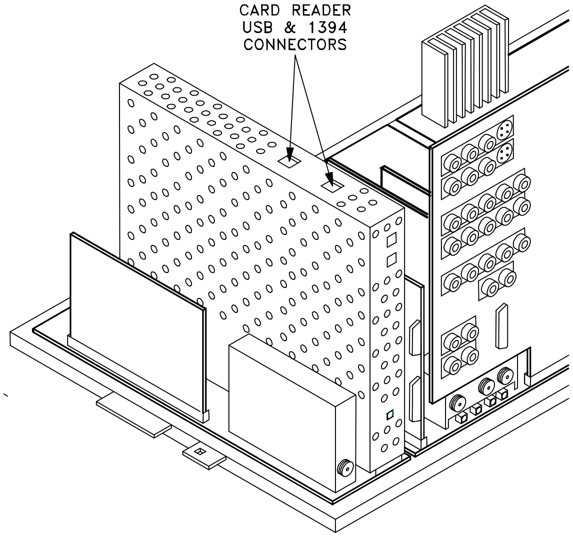
After re-installing the Lamp Cartridge Access Cover, short pins 2 and 3 on the EX-F connector. The unit will not turn on if it senses a fan is uplugged or the Lamp Cartridge Access Cover is not installed.

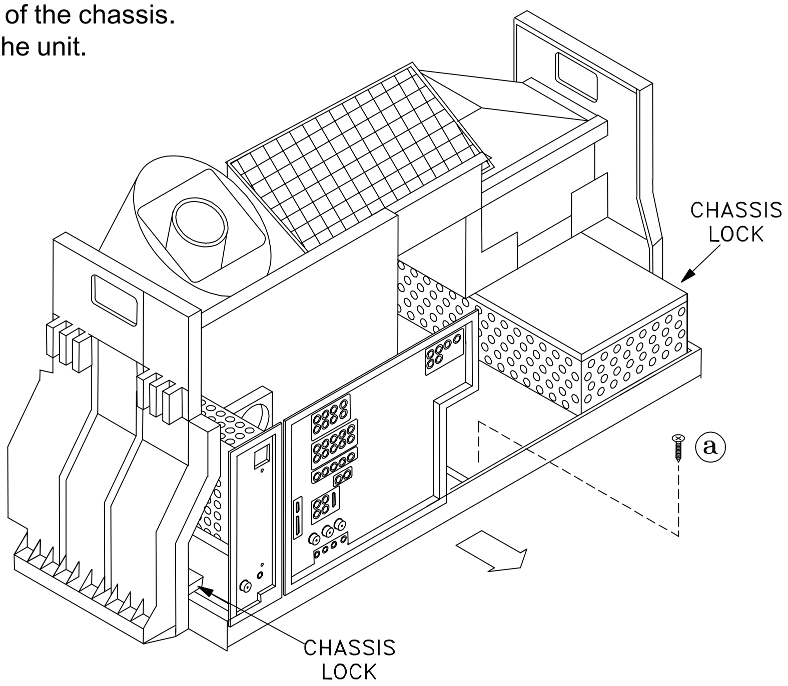


Main Chassis

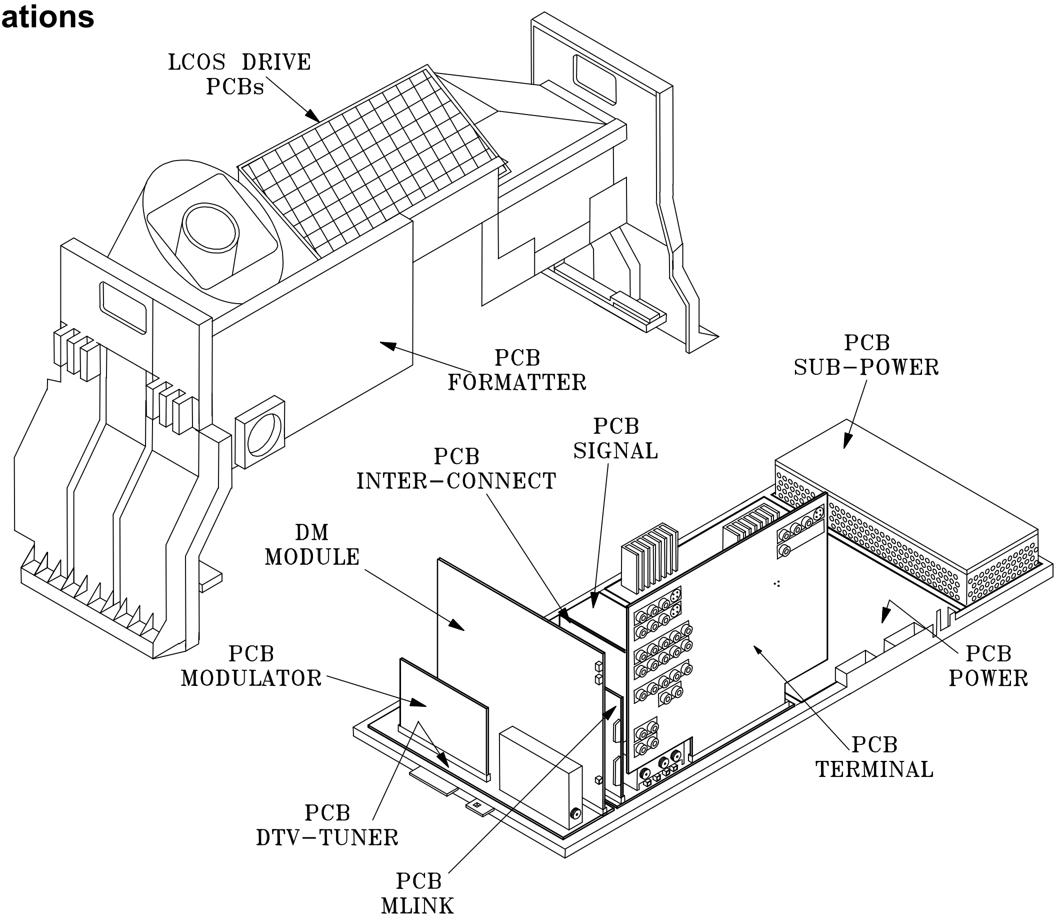
Accessing the Chassis

1. Undo the cable wire ties to the Front Panel, Speakers, etc.
2. Unplug the Card Reader USB and 1394 cables from the top of the DM module.
2. Remove screw (a) securing the Main Chassis.
3. Release the Chassis Locks on each side of the chassis.
4. Carefully slide the Chassis to the rear of the unit.


CARD READER
USB & 1394
CONNECTORS


CHASSIS
LOCK
a
CHASSIS
LOCK

PCB Locations


LCOS DRIVE
PCBs
PCB
FORMATTER
PCB
SUB-POWER
PCB
SIGNAL
PCB
INTER-CONNECT
DM
MODULE
PCB
MODULATOR
PCB
POWER
PCB
TERMINAL
PCB
DTV-TUNER
PCB
MLINK

DM Module Replacement

1. Unplug the Card Reader USB and 1394 cables from the DM module, and refer to the Chassis Removal Procedure to slide the chassis towards the rear of the set.
2. Remove screws (a), to remove the DM Rear Panel, *Figure 1*.
3. Remove screws (a) and (b) to remove the DM Module Cover, *Figure 2.*
3. Remove the E2P module from the original DM and plug it into the replacement DM.
5. Plug the DM module securely into the PCB-DTV-TUNER.
6. Check operation before installing the DM Cover, *Figure 3.*
    - Insert insulation (cardboard) between the Demodulator Ground Spring and the DM.
    - Plug the set in and check the operation.
    - If O.K., uplug the set and install the DM Cover.

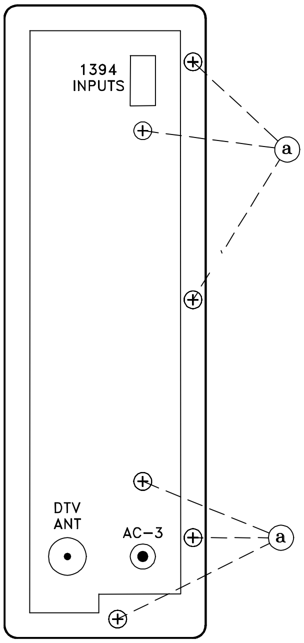

1394
INPUTS
a
a
DTV
ANT
AC-3

Figure 1: DM Rear Panel

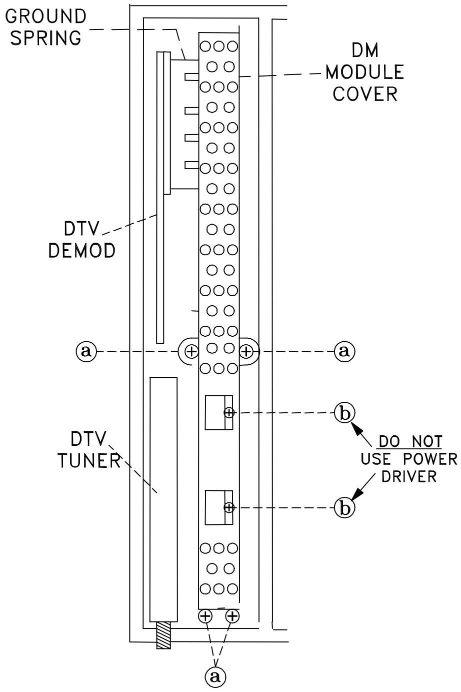

GROUND
SPRING
DM
MODULE
COVER
DTV
DEMOD
a
a
b
DO NOT
USE POWER
DRIVER
b
DTV
TUNER
a

Figure 2: DM Module Cover

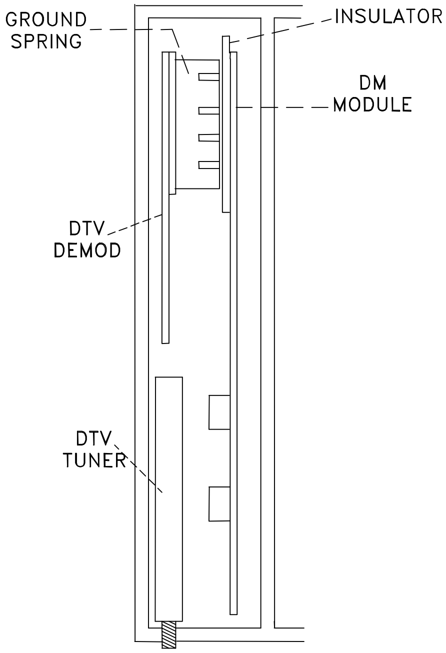

GROUND
SPRING
INSULATOR
DM
MODULE
DTV
DEMOD
DTV
TUNER

Figure 3: Checking new DM Operation

ELECTRICAL ADJUSTMENTS

Note: Perform only the adjustments required. Do not attempt an alignment if proper equipment is not available.

Test Equipment

- Oscilloscope (Unless otherwise specified, use 10:1 probes)
- Signal Generator (both SD and HD capable)
- Electrical Tools

Test Signal

1) Composite Video Signal
   Signal Level :1.0Vp-p (Ω)
   Video :0.714Vp-p
   Sync :0.286Vp-p
   Burst :-.286Vp-p

2) Component Signal (YPbPr)
   Y level :1.0Vp-p (75Ω)
   Video :0.7Vp-p
   Sync :0.3Vp-p
   Pb, Pr Signal Level :0.7Vp-p

3) RGB Signal
   R, G & B :0.7Vp-p (Ω)
   HD & VD :TTL level

Initial Setup

A. Option Menu Setup

Follow the steps below for the initial set-up:

1. Select the "MENU" display by pressing the "MENU" button once.
2. Press the number buttons "0", "3", "7", "0" in sequence to select the "OPTION MENU" display.
3. Press the "ADJUST" button to select "INITIAL."
4. Press "ENTER."

NOTE: At this time channel 3 is automatically selected.

(MENU-0-3-7-0)	
OPTION MENU	
Initial	
Power restore	:OFF
DTV Port	:Auto

B. Default Settings

MAIN MENU DEFAULT SETTINGS

SETUP	
Edit Setup	
Review	
Antenna A	(▤) Enabled
Antenna B	(▤) Enabled
Input DTV	(▤) Enabled
Input 1	(▤) Enabled
Input 2	(▤) Enabled
Input 3	(▤) Enabled
Component 1	(▤) Enabled
Component 2	(▤) Enabled
Antenna DTV	(▤) Enabled
VGA	(▤) Enabled
MonLink	(▤) Enabled
Card 1	(▤) Enabled
Card 2	(▤) Enabled
Card 3	(▤) Enabled
Card 4	(▤) Enabled
Icon Position	As above
Ant-A, Ant-B, Ant-DTV, ComFlash MemStick, SmartMed, MMC& SD Input-1, Input-2, Input-3, Comp-1, Comp-2, Input DTV, VGA, MonLink, Cards 1…4	
Transport Menu	On
Energy Mode	Standard
Language	English
ANTENNA	
Antenna	ANT A
Memorize Channels	Air
Channel	Ch-3
Memory	Deleted
TIME	
Clock Setting	Manual
Time	12:00 AM
Day	Monday
CAPTIONS	
Analog Captions	With Mute
Background	Gray
Digital Captions	With Mute
Digital Settings	
Appearance	Default
Digital Channel Guide	Off
V-CHIP LOCK	
V-CHIP	Off
TV Rating	TV-PG
FV-Fantasy Violence	(▤) Enabled
D-Sexual Dialog	(▤) Enabled
L-Adult Language	(▤) Enabled
S-Sexual Situation	(▤) Enabled
V-Violence	(▤) Enabled
Program not Rated	(▤) Enabled
Movie Rating	PG
V-Chip Time	
Start Time	12:00 AM
Stop Time	12:00 AM
Lock By Time	
Lock by Time	Off
Lock Time	NA
Unlock Time	NA
Front Button Lock	Off
AUDIO/VIDEO SETTINGS	
A/V Memory Reset	Ant-A
Audio	
Volume	30%
Bass	50%
Treble	50%
Balance	50%
Surround	Off
Listen to	Stereo
Level Sound	Off
TV Speakers	On
Audio 2 Out	Main
Video	
Contrast	100%
Brightness	50%
Sharpness	50%
Color	50%
Tint	50%
Color Temp.	High
Video Noise	Standard
Image Type	Video
TV Define EDGE	On
Auto Position (PC only)	…
Horiz. Position (PC only)	Center
Vert. Position (PC only)	Center
Side by Side Contrast (PC Side by Side only)	100%
Black Boarder	Off
Video Mute	On
Black Enhancement	On
Advanced	
Color Balance	Manual
PerfectColor™	
A/V Memory for Ant-A	All Centered
PIP/POP	
Source	Ant A Ch 3
PIP Position	Lower Right
POP Position	Right Half
PIP/POP Format	Dble. Window
Format	Stretched

A/V RESET DEFAULT SETTINGS (By Input)

A/V Memory	Ant A/B	Ant DTV	Inp-DTV	INPUTS 1/2/3	Compon. 1/2	VGA	1394 1/2/3	MonLink	Card 1~4
Contrast	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
Brightness	Center	Center	Center	Center	Center	Center	Center	Center	Center
Sharpness	Center	Center	Center	Center	Center	N/A	Center	Center	Center
Color	Center	Center	Center	Center	Center	Center	Center	Center	Center
Tint	Center	Center	Center	Center	Center	Center	Center	Center	Center
Color Temp.	High	High	High	High	High	High	High	High	High
Video Noise	Standard	N/A	Standard	Standard	Standard	N/A	N/A	Standard	N/A
Image Type	Video	N/A	Video	Video	Video	N/A	N/A	Video	N/A
VSM Sharpness	On	On	On	On	On	On	On	On	On
Bass	Center	Center	Center	Center	Center	Center	Center	Center	Center
Treble	Center	Center	Center	Center	Center	Center	Center	Center	Center
Balance	Center	Center	Center	Center	Center	Center	Center	Center	Center
Surround	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Listen To	Stereo	English	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Level Sound	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

NOTE: Front panel AV Reset… resets all AV Memory Settings
User Menu AV Reset … only resets the selected AV Memmory

C. A/V Memory

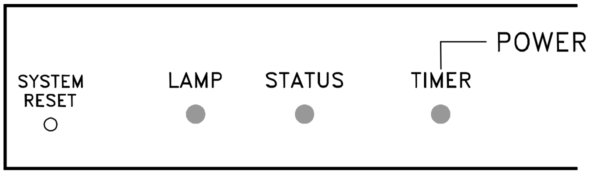
Each of the external inputs has its' own Audio/Video Memory. A change in an A/V setting at a specific input is stored in memory for that specific input.

D. A/V Reset

1. The front panel AV Reset button initializes all A/V Memories.
2. The AV Reset in the user's menu initializes only the selected input's A/V Memory.

LED Indicator Diagnostics

The front panel LEDs provide an indication of the sets operation, and the possible cause of a malfunction. There are three front panel LEDs, "Power", "Status" and "Lamp". Which LED is lit, the color and whether it is blinking or steady indicate the current status, or a possible malfunction.



Front Panel LEDs

1. LED Designations (Normal Conditions)

Normal Conditions	LEDs		
	POWER	STATUS	LAMP
TV Off (Standby)	Off	Off	Off
Lamp Standby	Green (fast blink)	Off	Off
Power On	Green	Off	Off
Power ON to Standby mode (Fan operating)	Green (fast blink)	Off	Off
Booting up after AC applied	Green (fast blink)	Off	Off
On Timer Set	Green (slow blink)	Off	Off

2. LED Designations (Abnormal Conditions)

Abnormal Conditions	LEDs		
	POWER	**STATUS**	**LAMP**
Temperature Hot (Check Air Filter)	Off	Yellow	Off
Lamp usage over 3000 hours	_	Off	Yellow
Lamp Cover is open	Off	Off	Yellow (blinking)
No Lamp Installed	Off	Off	Yellow (blinking)
Lamp Failed to turn On (or broken)	Off	Off	Red
Fan stopped	Off	Red	Off
Circuit Failure (short problem)	Off	Red	Off

- Status LED ….Excess Temperature or Circuit problem
- Lamp LED … Lamp Status
- Yellow … "Warning"
- Red … "More Serious Warning"

3. Error Code Operational Check

Note: The TV must be in “Shut Down” and not have been switched Off, to perform the Error Code Operational Check. When the TV is switched Off, the code automatically resets to “12” No Error.

Pressing the front panel “DEVICE” and “MENU” buttons at the same time, and holding for 5 seconds, activates the Error Code Mode. The LED flashes denoting a two digit Error Code, or indicating no problem has occured since the last Initalization.

Note: The front panel buttons must be used, NOT those on the Remote Control.

- The number of flashes indicates the value of the MSD (tens digit) of the Error Code.
- The flashing then pauses for approximately 1/2 second.
- The LED then flashes indicating the value of the LSD (ones digit) of the Error Code.
- The Error Code is repeated a total of 5 times.
  Example: If the Error Code is “23”, the LED will flash two times, pause, and then flash three times.

4. Error Codes

The Error Code designations indicating malfunction, or no malfunction, are listed below:

Press and Hold "DEVICE" and "MENU" FOR 5 SECONDS

Error Code	Probable Cause
12	No error detected
22	Recovery from momentery Reset
31	Lamp not detected
32	Lamp Cover open
34	Lamp abnormality
35	Fan failed
38	Excess Lamp Temperature
39	Excess LCOS Temperature
41	Short Detected
42	Excess PCS Temperature
43	Driver Temperature or Voltage abnormal

Remote Control Operational Modes

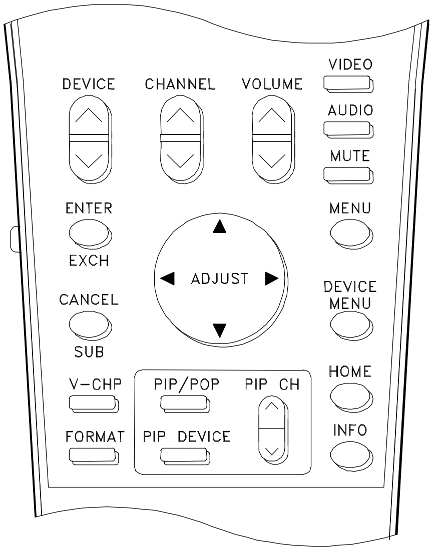
There are two Remote Hand Unit Operational Modes, “Standard” and “NetCommand™”. The Remote is initially in the “Standard” mode. The “NetCommand™” mode is used when controlling Home Theater devices using NetCommand™. To change the Remote Operational Mode:

- Set the Remote to the TV Layer
- Point the Remote away from the TV.
- To change to “Netcommand™” ... Hold the “Power” button and press “9-3-5” in sequence.
- To change to “Standard” ... Hold the “Power” button and press “0-0-0” in sequence.

Circuit Adjustment Mode

Most of the adjustments can only be performed using the remote hand unit. Many of the adjustments must be performed in both the 480i and 1080i modes. Video/Color adjustments must be performed in the 480i and 1080i modes, and data must be preset in the 480P (DVD) and VGA modes.

Note: Set the Remote Operational Mode to "NetCommand™". (Hold the "Power" button and press "9-3-5" in sequence.) This slows the remote's response and makes adjustments easier. When adjustments are complete, **set the Remote to its' original Operational Mode.** (Hold the "Power" button and press "0-0-0" in sequence)

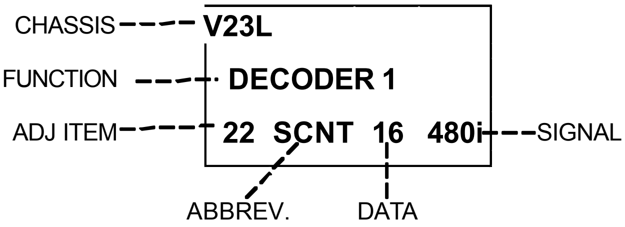

VIDEO
DEVICE
CHANNEL
VOLUME
AUDIO
MUTE
ENTER
MENU
EXCH
ADJUST
CANCEL
DEVICE MENU
SUB
HOME
V-CHP
PIP/POP
PIP CH
FORMAT
PIP DEVICE
INFO

A. Activating the Circuit Adjustment Mode

The current signal source determines if the activated Adjustment Mode is 480i or 1080i.

1. Select the signal source (480i or 1080i).
2. Press the "MENU" button on a remote hand unit.
3. Press the number buttons "0", "3", "5", "7" in sequence. The screen will change to the Adjustment Mode.

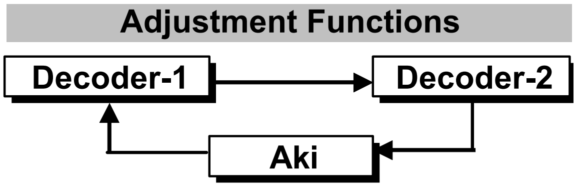
Note: Repeat steps 1 and 2 if the circuit adjustment mode does not appear on screen.


CHASSIS
V23L
FUNCTION
DECODER 1
ADJ ITEM
22 SCNT 16 480i
SIGNAL
ABBREV.
DATA

B. Selection of adjustment Functions and Adjustment Items

To select an adjustment item in the circuit adjustment mode, first select the adjustment function that includes the specific adjustment item to be selected. Then select the adjustment item. Refer to the following pages for the listing of adjustment functions and adjustment items.

1. Press the "AUDIO" button on a remote hand unit to select an adjustment function. Each time the button is pressed, the Function changes in the following sequence:


Adjustment Functions
Decoder-1
Decoder-2
Aki

2. Press the "VIDEO" button to select a specific Adjustment Item. The Item number increases each time the "VIDEO" button is pressed.

C. Changing Data

After selecting an adjustment Item, use the "ADJUST UP/DOWN" buttons to change data.

- Press "ADJUST DOWN" to decrease the data value.
- Press "ADJUST UP" to increase the data value.

D. Saving Adjustment Data

Press "ENTER" to save adjustment data in memory. The character display turns red for approximately one second in this step.

Note: If the circuit adjustment mode is terminated without pressing "ENTER", changes in adjustment data are not saved.

E. Terminating the Circuit Adjustment Mode

Press the “MENU” button on the remote hand unit twice to terminate the adjustment mode.

Note: The circuit adjustment mode can also be terminated by turning power OFF.

F. Service Mode Reset

To reset items in the Service Mode to their factory values:

1. Press MENU-0-3-5-7 to enter the Service Mode.
2. Press the “0,1,2,3,” insequence to Reset to the Factory settings.

On Screen Display Position Adjustment Mode

Activation

1. Select 480i or 1080i source.
2. Press MENU-0-3-8-8

E2PROM Replacement

Service Data is stored on the PCB-E2P located on the DM assembly. When replacing the DM assembly, retaining the original PCB-E2P will eliminate the need for any realignment. The following tables are provided as a guide in case of total data loss.

List of Adjustment Items.

DECODER-1 MENU-0-3-5-7

Item #	Abbrev.	Description	Range	NTSC	Component			RGB
					480i	480p	1080i	
22	SCNT	Y-Out Amplitude	0~31	14	16	16	16	16
24	SCLR	Cb/Cr Out Amplitude	0~31	13	16	16	16	16

DECODER-2 MENU-0-3-5-7

Item #	Abbrev.	Description	Range	NTSC	Component			RGB
					480i	480p	1080i	
22	SCNT	Y-Out Amplitude	0~31	12	12	12	12	12
24	SCLR	Cb/Cr Out Amplitude	0~31	13	13	13	13	13

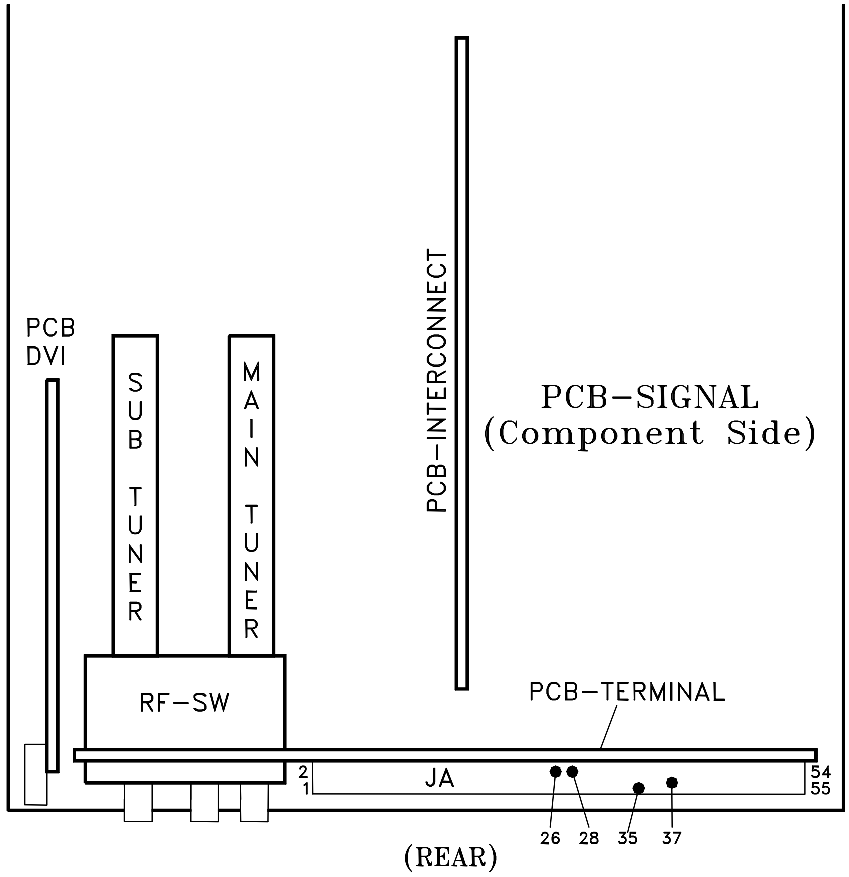
Aki MENU-0-3-5-7

Item #	Abbrev.	Description	Range	Data
1	TPAT	Test Pattern	1~22	0
2	HPOS	Horizontal Position		160
3	VPOS	Vertical Position		35
4	RGB	RGB Ouput Setting	0~3	0
5	CONT	Main AD contrast	0~255	79
6	R-HI	R value (hi-temp)	0~127	255
7	G-HI	G value (hi temp)	0~127	255
8	B-HI	B value (hi temp)	0~127	255
9	R-LO	R value (lo-temp)	0~127	255
10	G-LO	G value (lo temp)	0~127	255
11	B-LO	B value (lo temp)	0~127	255
12	TPCR	Test pattern Red level	0~255	64
13	TPCG	Test pattern Green level	0~255	64
14	TPCB	Test pattern Blue level	0~255	64

OSD Horizontal Centering MENU-O-3-8-8

Abbrev.	Description	Range	Data
OSDSD	OSD Horizontal Position for SD	0~960	135

Adjustment Test Points


PCB
DVI
SUB TUNER
MAIN TUNER
PCB–INTERCONNECT
PCB–SIGNAL
(Component Side)
RF–SW
PCB–TERMINAL
2
1
JA
54
55
26
28
35
37
(REAR)

Test Points

JA pin 26 .... Main Y Gain
JA pin 28 .... Main Color Level
JA pin 35 .... Sub Y Gain
JA pin 37 .... Sub Color Level

[Video Circuit]

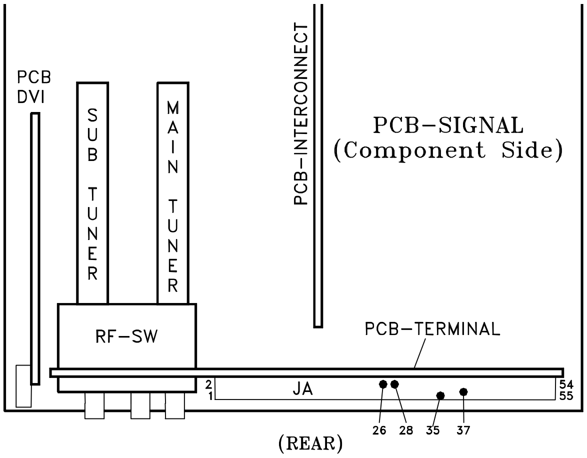
1. Main/Sub Y Gain

Purpose: To set picture luminance.

Symptom: Excessive or insufficient brightness.

Measuring Instrument	Oscilloscope
Test Point	JA pins 26 & 35
Ext. Trigger	------
Measuring Range	50mV/Div
Input Signal	ColorBars (100% White level)
Input Terminal	Video Input (1 or 2)

1. Supply a color bar signal to Video Input 1 or 2 (not an RF input).
2. Select the color bar signal as the source for both main and sub pictures.
3. Connect an oscilloscope to connector JA pin 26 (Main-Y)
4. Activate the Circuit Adjust Mode.
5. Select item “22 SCNT” in the Decoder-1 function.
6. Adjust the data between 0.71 Vp-p max. and 0.66 Vp-p min. at JA pin 26.
7. Move oscilloscope to JA pin 35 (Sub-Y)
8. Select item “22 SCNT” in the Decoder-2 function.
9. Adjust data so the Sub-Y signal equals Main-Y (+0.0V -0.06V).


PCB DVI
SUB TUNER
MAIN TUNER
PCB-INTERCONNECT
PCB-SIGNAL (Component Side)
RF-SW
PCB-TERMINAL
2
1
JA
54
55
26
28
35
37
(REAR)

CIRCUIT ADJUST MODE

Activate …….. MENU-0-3-5-7
Function ……..………AUDIO
Item No. ……………..VIDEO
Adjust Data ………..ADJUST
Save Data …. ………ENTER
Exit …………..MENU (twice)

[Audio Circuit]

2. Main/Sub Color Level

Purpose: To match sub picture color to that of the main picture.

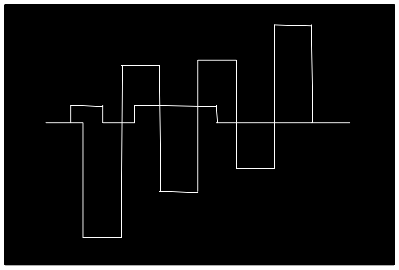
Symptom: Main and sub pictures colors differ.

Measuring Instrument	Oscilloscope
Test Point	JA pins 28 & 37
Ext. Trigger	------
Measuring Range	50mV/Div
Input Signal	Color Bars
Input Terminal	Video Input (1 or 2)

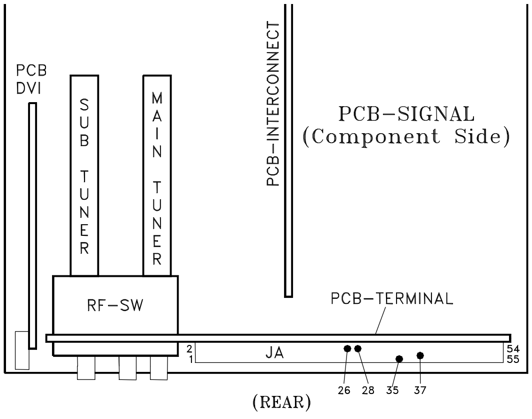
1. Supply a color bar signal to Video Input 1 or 2 (not an RF input).
2. Select the color bar signal as the source for both main and sub pictures.
3. Connect an oscilloscope to connector JA pin 28 (Main-Pb)
4. Activate the Circuit Adjust Mode.
5. Select item “24 SCLR” in the Decoder-1 function.
6. Adjust the data between 0.71 Vp-p max. and 0.66 Vp-p min. at JA pin 28.
7. Move oscilloscope to JA pin 37 (Sub-Pb)
8. Select item “24 SCLR” in the Decoder-2 function.
9. Adjust data so the Sub-Y signal equals Main-Y (+0.0V -0.06V).

CIRCUIT ADJUST MODE

Activate …….. MENU-0-3-5-7
Function ……..………AUDIO
Item No. ……………..VIDEO
Adjust Data ………..ADJUST
Save Data …. ………ENTER
Exit …………..MENU (twice)



Main-Pb


PCB DVI
SUB TUNER
MAIN TUNER
PCB-INTERCONNECT
PCB-SIGNAL (Component Side)
RF-SW
PCB-TERMINAL
2
1
JA
54
55
26
28
35
37
(REAR)

[On Screen Display]

12.Character Position

Purpose: To position the character display horizontally.

Symptom: Incorrect display position

Measuring Instrument	-----
Test Point	-----
Ext. Trigger	------
Measuring Range	------
Input Signal	Video Signal (NTSC)
Input Terminal	ANT-A

1. Supply an NTSC signal to Ant-A and select Ant-A as the source.
2. Enter the OSD Position Mode, press “MENU-0-3-8-8”.
3. Adjust “OSDSD” to center the OSD horizontally.
4. Press “MENU” to save data and exit the mode.

[High Voltage Circuit]

3. Horizontal/Vertical Position

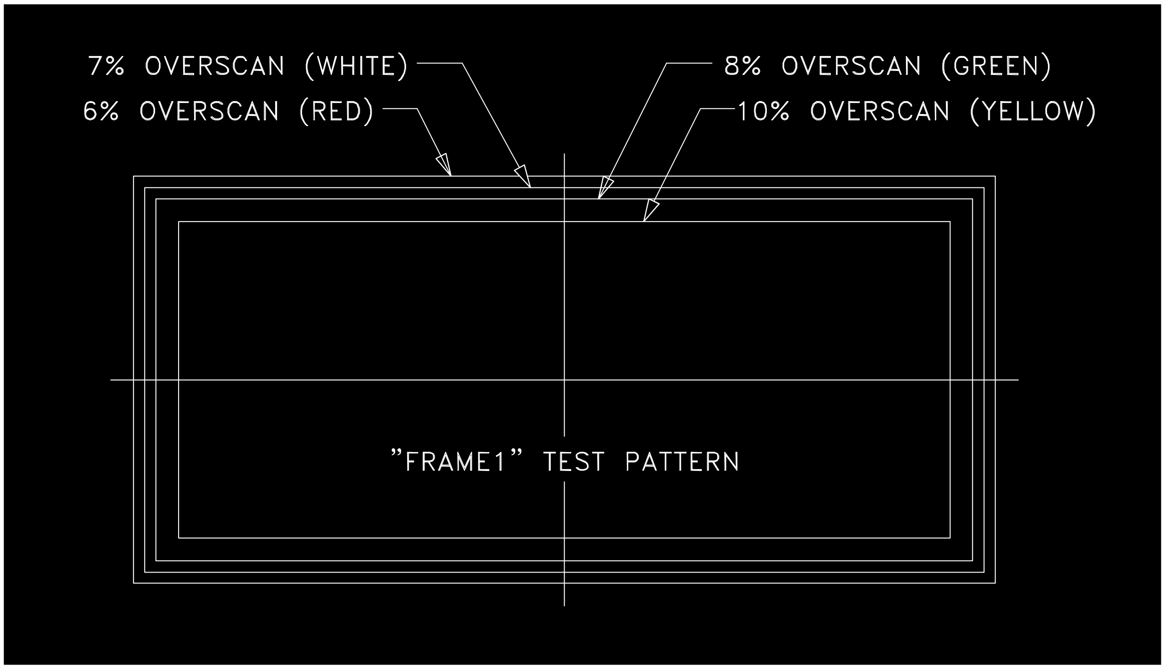
Purpose: To center picture on the screen.

Symptom: Picture is off center.

Measuring Instrument	----
Test Point	----
Ext. Trigger	------
Measuring Range	-------
Input Signal	None
Input Terminal	Comp-1 / DTV

Alignment for all inputs except Ant-DTV

1. Select the Component-1 Input, no signal.
2. Enter the Service Adjustment Mode.
3. Select Item “1 TPAT” in the Aki Function.
4. Select “1 (FRAME 1)” pattern.
5. Select Item “2 HPOS”
6. Center the picture horizontally, and press “Enter”.
7. Select “3 VPOS” and center the picture vertically.
8. Press “Enter”.
9. Press “Menu” twice to terminate the Adjustment Mode.



CIRCUIT ADJUST MODE

Activate …….. MENU-0-3-5-7
Function …..………..AUDIO
Item No. ……..……VIDEO
Adjust Data ……….ADJUST
Save Data …. ………ENTER
Exit …………..MENU (twice)

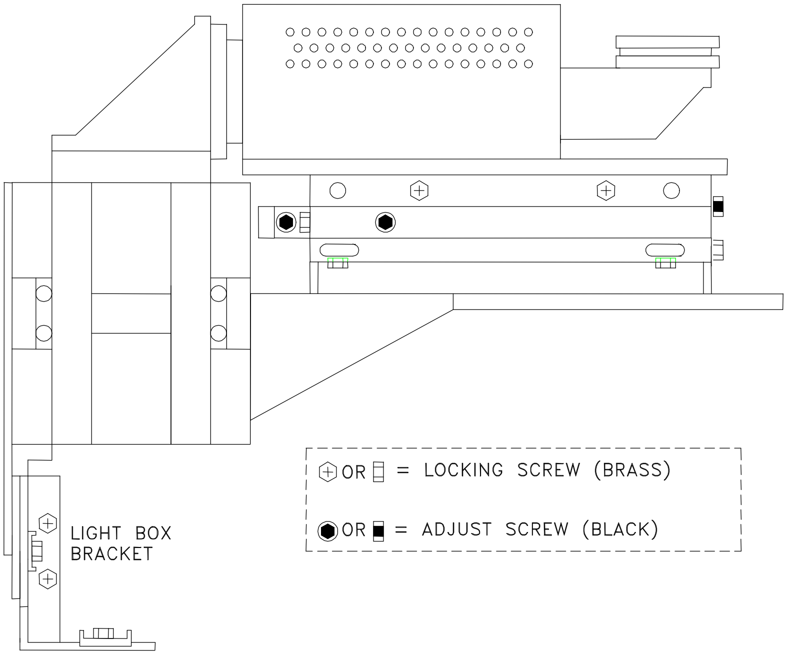
Alignment for the Ant-DTV Input only.

1. Select the Ant DTV Input, no signal.
2. Enter the Service Adjustment Mode.
3. Select Item “1 TPAT” in the Aki Function.
4. Select “1 (FRAME 1)” pattern.
5. Select Item “2 HPOS”
6. Center the picture horizontally, and press “Enter”.
7. Select “3 VPOS” and center the picture vertically.
8. Press “Enter”.
9. Press “Menu” twice to terminate the Adjustment Mode.

OPTICAL UNIT ADJUSTMENTS

General Adjustment Procedure

1. Loosen the locking screw (brass) for the specific adjustment.
2. Rotate that adjustment adjusting screw (black) to perform the adjustment.
3. After adjusting, tighten the locking screws.

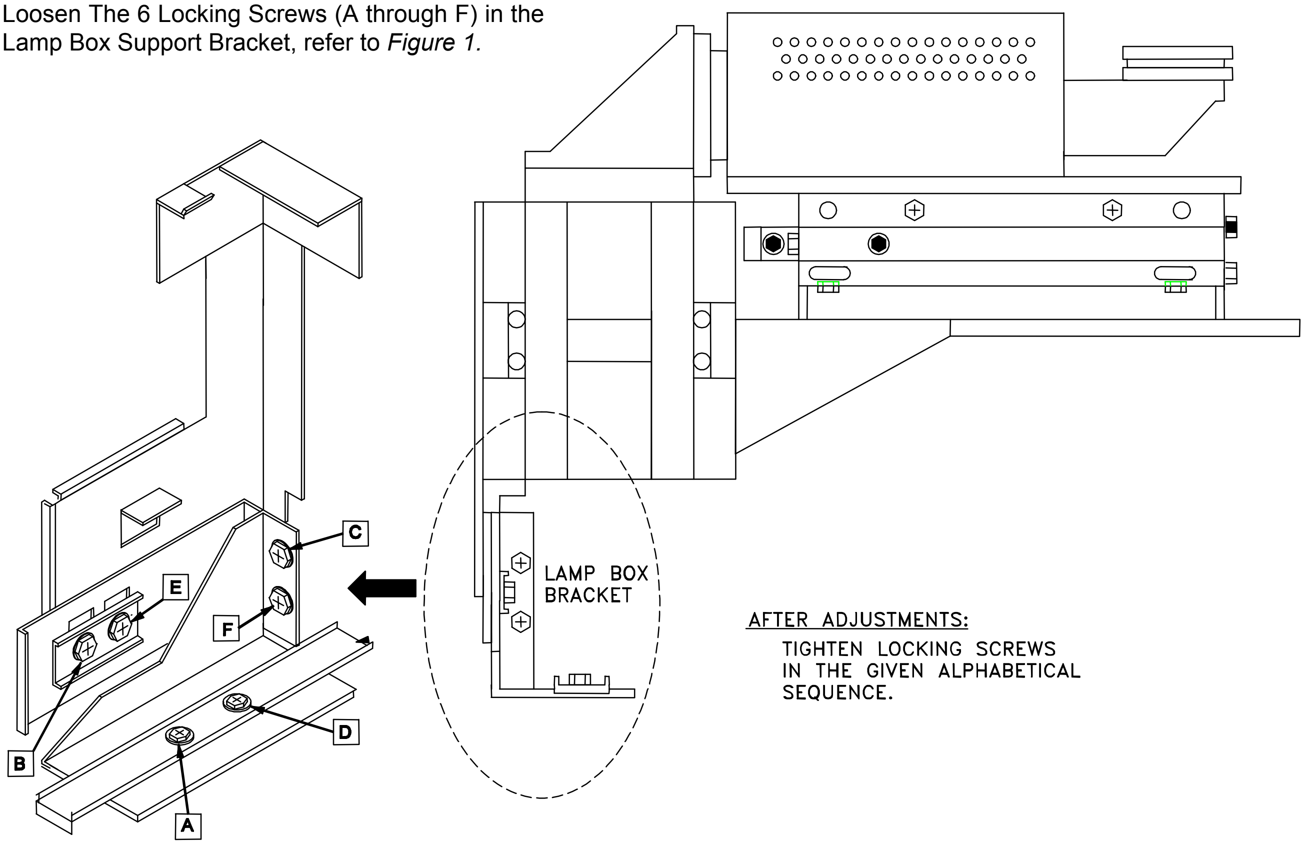

LIGHT BOX BRACKET
⊕ OR ▯ = LOCKING SCREW (BRASS)
● OR ▮ = ADJUST SCREW (BLACK)

Light Engine (Front View)

Operational Preparations

Lamp Bracket Preparations

Loosen The 6 Locking Screws (A through F) in the Lamp Box Support Bracket, refer to *Figure 1*.


C
E
F
D
B
A
LAMP BOX BRACKET

AFTER ADJUSTMENTS:
TIGHTEN LOCKING SCREWS IN THE GIVEN ALPHABETICAL SEQUENCE.

Figure 1: Lamp Bracket Locking Screws

Screen Preparation

1. Attach masking tape to the center of each side of the screen frame. (Fig.2)
2. Mark the center of the each side of the screen frame over the tape with a pen. *(Fig.2)*

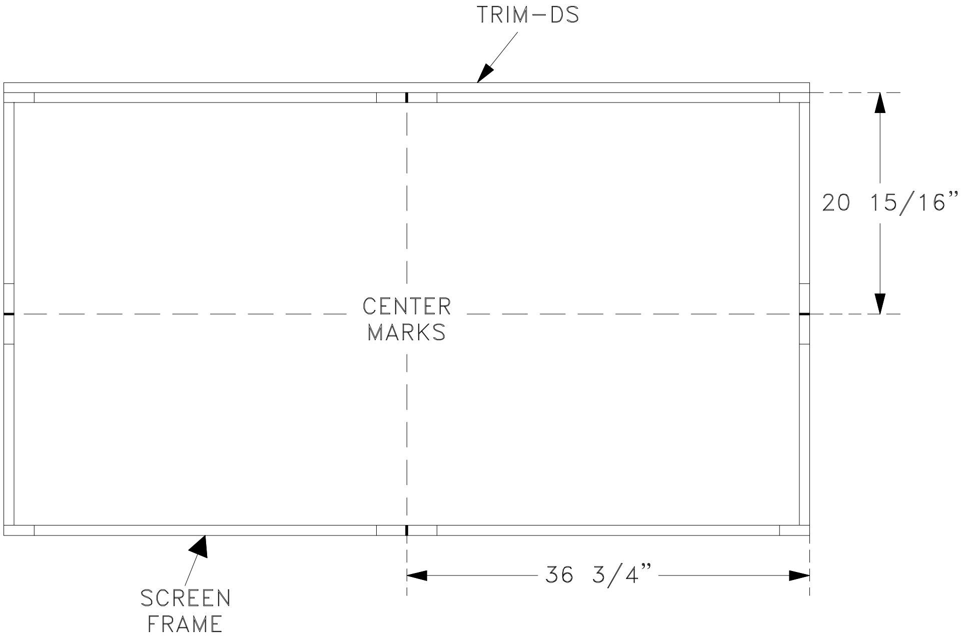

TRIM–DS
20 15/16"
CENTER
MARKS
36 3/4"
SCREEN
FRAME

Figure 2: Marking the Screen Center Points

Selecting Internal Test Signals

1. Press the buttons "MENU", "0", "3", "5" "7" in order.
2. Select Item "1 TPAT" in the AKi function.
3. Select "1 (FRAME 1)" test pattern.

The adjustment signal in *Fig. 3* is displayed on the screen.

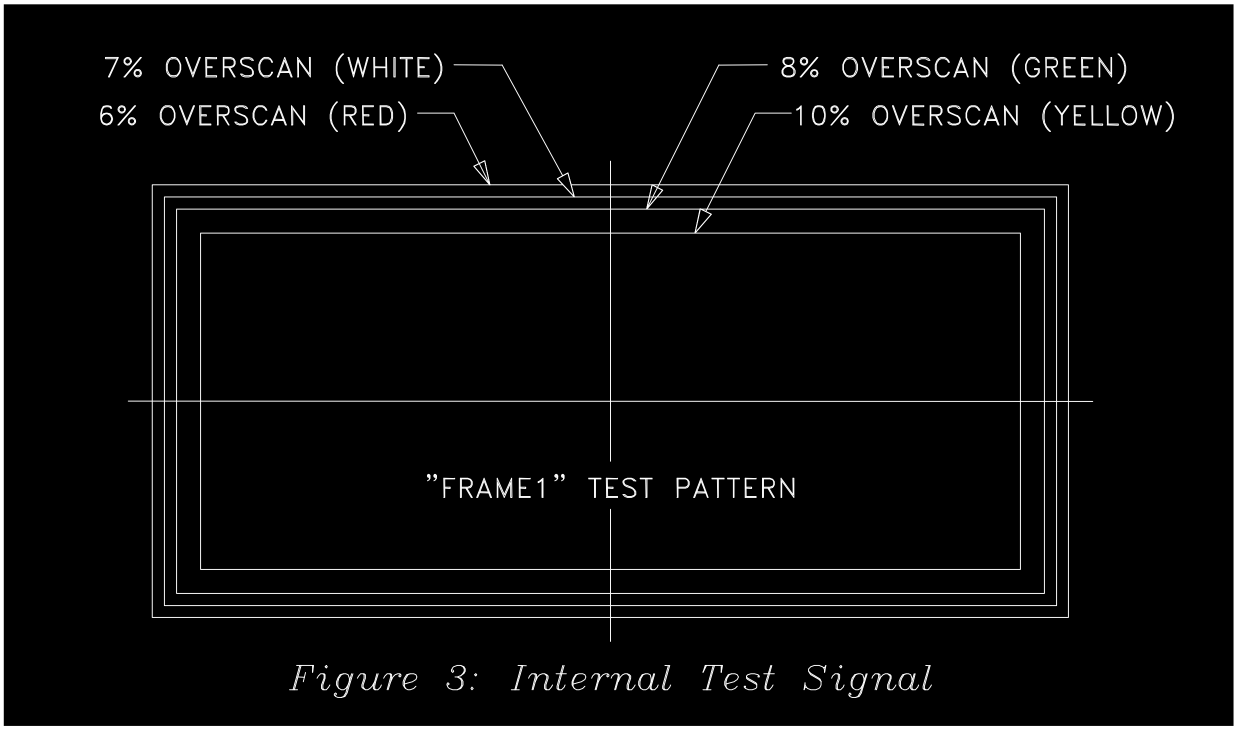

7% OVERSCAN (WHITE)
6% OVERSCAN (RED)
8% OVERSCAN (GREEN)
10% OVERSCAN (YELLOW)
"FRAME1" TEST PATTERN

Figure 3: Internal Test Signal

Picture Rotation Adjustment

Refer to *Fig. 4*

1. Slightly loosen the two Locking Screws (1).
2. Use (A-1) to adjust rotations
3. Tighten the two Locking Screws (1).

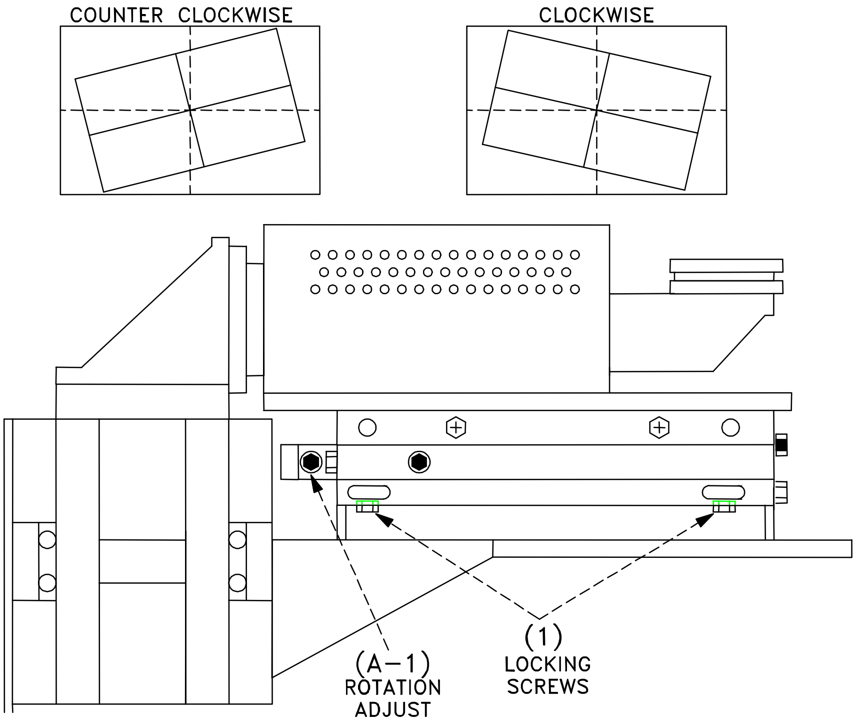

COUNTER CLOCKWISE
CLOCKWISE
(A−1)
ROTATION
ADJUST
(1)
LOCKING
SCREWS

Figure 4: Rotation Adjustment

Adjusting Vertical Trapezoid Distortion

Refer to *Fig. 5*

1. Slightly loosen the two Locking Screws (2)
2. Use (A-2) to adjust Vertical Trapezoid Distortion.
   NOTE: If the picture moves horizontally, use the electrical Horiz. Position adjustment to recenter the picture.
3) Tighten the two Locking Screws (2).

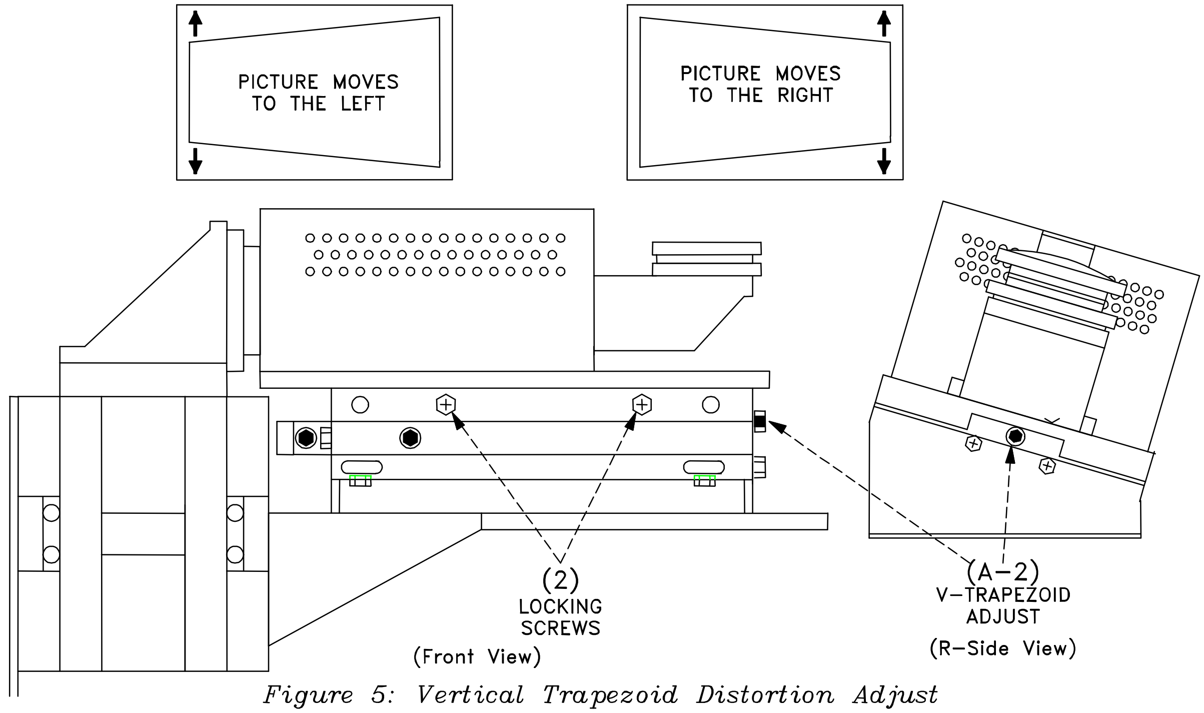

PICTURE MOVES
TO THE LEFT
PICTURE MOVES
TO THE RIGHT
(2)
LOCKING
SCREWS
(Front View)
(A−2)
V−TRAPEZOID
ADJUST
(R−Side View)

Figure 5: Vertical Trapezoid Distortion Adjust

Adjusting Horizontal Trapezoid Distortion

Refer to Fig. 6

1. Slightly loosen the three Locking Screws (3)
2. Use (A-3) to adjust Horizontal Trapezoid Distortion.
   NOTE: If the picture moves vertically, use the electrical Vertical Position adjustment to recenter the picture.
3) Tighten the three Locking Screws (3).

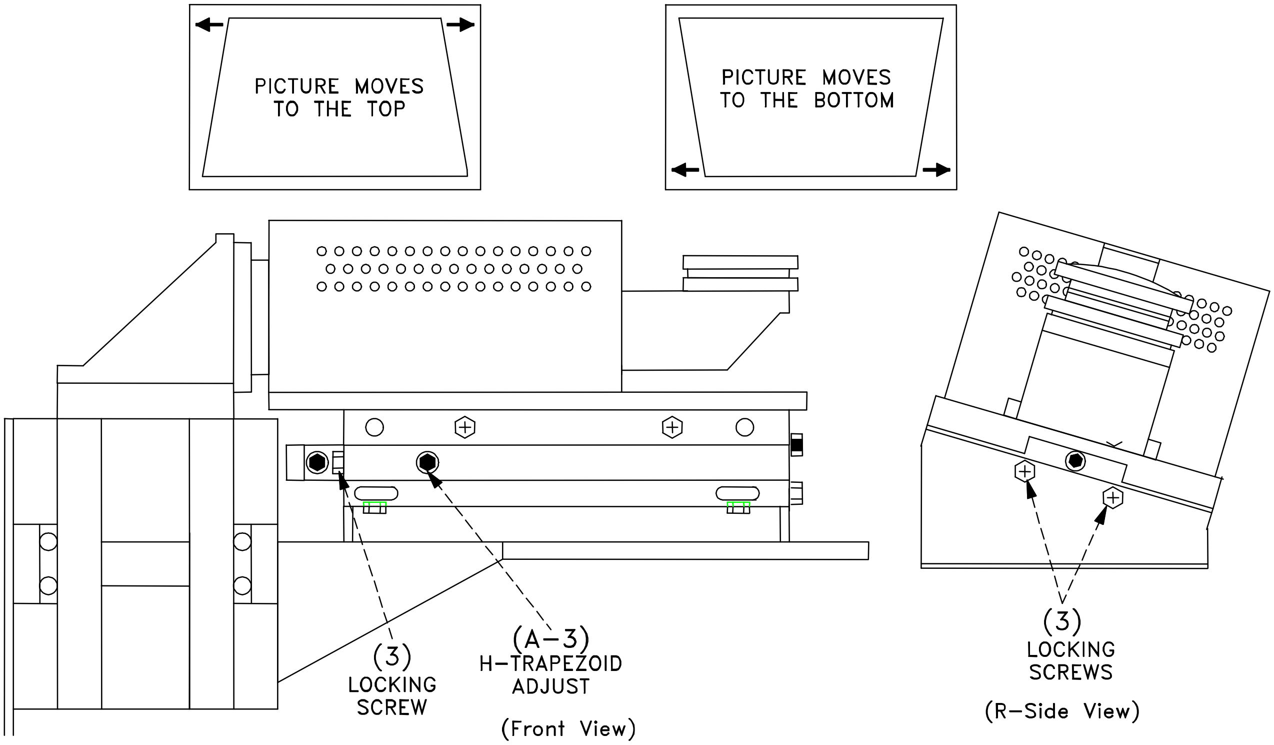

PICTURE MOVES TO THE TOP
PICTURE MOVES TO THE BOTTOM
(3) LOCKING SCREW
(A-3) H-TRAPEZOID ADJUST
(Front View)
(3) LOCKING SCREWS
(R-Side View)

Figure 6: Horizontal Trapezoid Distortion Adjust

CHIP PARTS REPLACEMENT

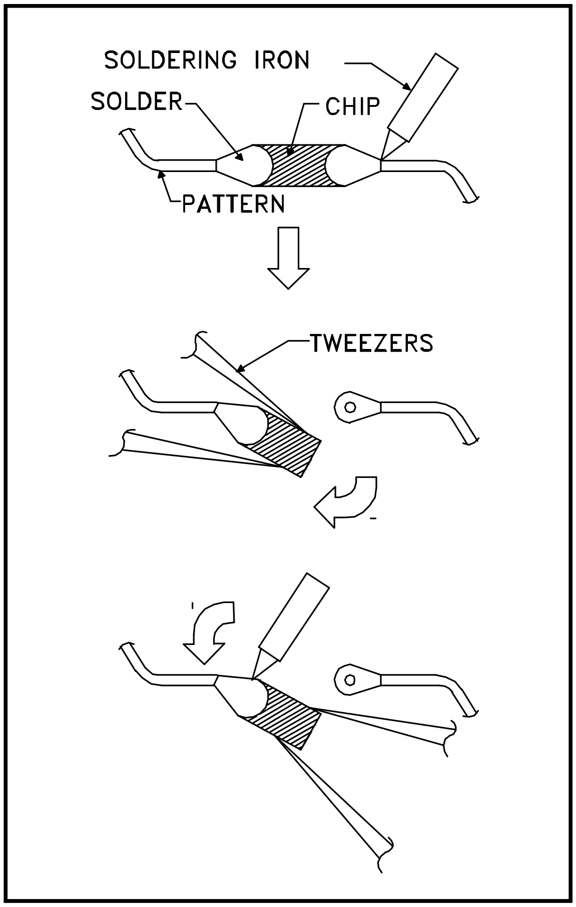
Some resistors, shorting jumpers (0 Ohm resistors), ceramic capacitors, transistors and diodes are chip parts. The following precautions should be taken when replacing these parts.

Cautions:

1. Use a fine tipped, well insulated soldering iron (approximately 30 watts), and tweezers.
2. Melt the solder and remove the chip parts carefully so as not to tear the copper foil from the printed circuit board.
3. Discard removed chips; do not reuse them.
4. Do not apply heat for more than 3 (three) seconds to new chip parts.
5. Avoid using a rubbing stroke when soldering.
6. Take care not to scratch, or damage the chip parts when soldering.
7. Supplementary cementing is not required.

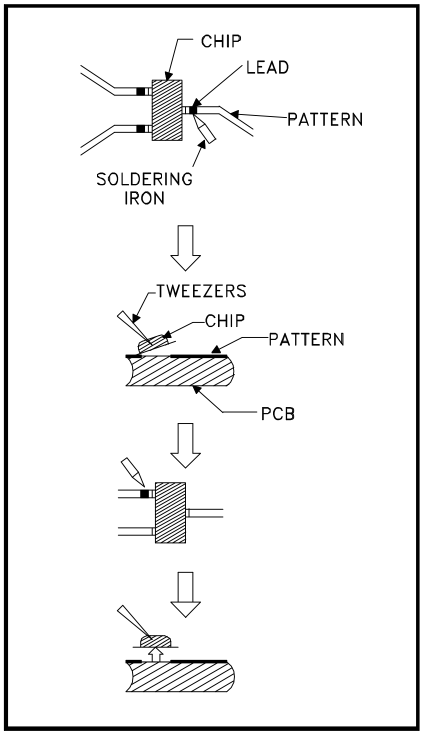
Chip Parts Removal (Resistors, Capacitors, etc.)

1. Grasp the part with tweezers. Melt the solder at both sides alternately, and remove one side of the part with a twisting motion.
2. Melt the solder at the other side and remove the part.


SOLDERING IRON
SOLDER
CHIP
PATTERN
TWEEZERS

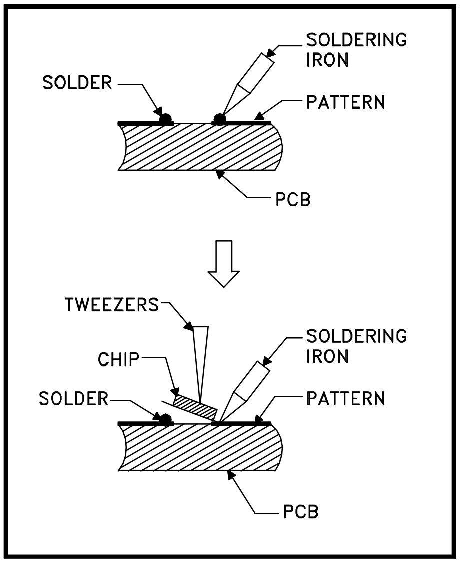
Chip Parts Removal (Transistors)

1. Melt the solder of one lead and lift the side of that lead upward.
2. Simultaneously melt the solder of the other two leads and lift the part from the PCB.


CHIP
LEAD
PATTERN
SOLDERING IRON
TWEEZERS
CHIP
PATTERN
PCB

Replacement

1. Presolder the contact points on the circuit pattern.
2. Press the part downward with tweezers and apply the soldering iron as shown.


SOLDERING IRON
SOLDER
PATTERN
PCB
TWEEZERS
SOLDERING IRON
CHIP
SOLDER
PATTERN
PCB

REPLACEMENT PARTS

Parts Ordering
To expedite delivery of replacement parts orders, specify the following:

1. Model Number/Serial Number
2. Part Number and description
3. Quantity

Note: Unless complete information is supplied, delay in processing of orders will result.

Critical and Warranty Parts Designation

Critical Electrical Components are indicated by **Bold Type** in the Parts List, and in the schematic diagrams by shading. ░

Warranty Return Parts are indicated in the Parts List with an **(*)**.

Parts Tolerance Codes
Refer to the following chart for tolerance characteristics of electrical components.

MARK	B	C	D	F	G	J	K
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10

MARK	M	N	V	X	Z	P	Q
Tolerance %	± 20	± 30	± 10	+ 40 -20	+ 80 -20	+ 100 - 0	+ 30 -10

MARK	M	N	V	X	Z
Tolerance (pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

MODEL: WL-82913

QUICK REFERENCE FOR COMMON REPLACEMENT PARTS

PART DESCRIPTION	PART NUMBER
SCREENS	
LENS-FRESNEL - 82"	491P169010
SCREEN-DIFFUSER - 82"	491P168010
DIAMOND SHIELD - 82"	KIT-WL82913 DS
PCBs	
PCB-CONTROL	935D748001
PCB-DEMOD	934C066001
PCB-DM	934C067004
PCB-DTVTUNER	934C105001
PCB-E2P	934C061001
PCB-FORMATTER	930B908001
PCB-FRONT	935D749001
PCB-LCOS-INTERCONNECT	934C069001
PCB-MEMORY-CARD	299P271010
PCB-MLINK	930D059002
PCB-POWER	930B906001
PCB-PREAMP	935D733008
PCB-SIGNAL	930B905008
PCB-SUB-POWER	930B913001
PCB-TERMINAL	934C060008

PART DESCRIPTION	PART NUMBER
OPTICAL UNIT	939P953010
LAMP-CARTRIDGE	915P016010
LAMP-POWER-UNIT	939P954010
SENSOR-LAMP TEMPERATURE	299C050010
FANS	
FAN-COMBINER	299C038010
FAN-EXHAUST/LAMP-PWR	299P103060
FAN-FORMATTER	299P103050
FAN-ILLUMINATION	299C037010
FAN-LAMP	299C039010
REMOTE CONTROL - V22+/V23	**290P117010**
ARC PARTS	
DOWEL-PIN (ARC)	689D006010
TAP-SCREW (ARC)	669D140070
Service Operation Kit	**KIT-RECEIVER 82913**

INTEGRATED CIRCUITS

Ref #	Part #	Part Name & Description	[#]
IC2A00	275P937010	IC-C-MOS - MM1519XQ	
IC2A95	270P994010	IC - MAX4550CAI	
IC2B00	275P937010	IC-C-MOS - MM1519XQ	
IC2C00	275P989010	IC-C-MOS - MAX3223ECAP	
IC2D00	270P974010	IC-C-MOS - SII907B	
IC2D01	275P981010	IC-C-MOS - 24LCS22AT/SN	
IC2D02	261P135010	FET-HEX - IRF7313	
IC2D03	270P677010	IC - BA033FP	
IC2E00	275P947010	IC-C-MOS - UPD64083	
IC2E20	272P379020	IC - LM1881MX (NSC)	
IC2E65	270P992020	IC - BA25BC0FP	
IC2F00	276P021010	IC-C-MOS - TA1340AF	
IC2F10	270P677020	IC - BA05FP	
IC2G00	276P021010	IC-C-MOS - TA1340AF	
IC2H01	275P937010	IC-C-MOS - MM1519XQ	
IC2K00	270P623010	IC - CXA2069Q	
IC2L00	270P623010	IC - CXA2069Q	
IC2S01	271P004010	IC - CM1208-08MS	
IC3A01	275P731020	IC-C-MOS - MSP3445G-QI-B8-V3	
IC3E01	**270P750010**	**IC - LA4663**	
IC5200	270P677030	IC - BAO9FP	
IC5251	270P988010	IC-OP AMP - LM358M	
IC5252	270P877010	IC - UPC3217GV	
IC5253	270P877010	IC - UPC3217GV	
IC52A0	275P715020	IC-C-MOS - BCM3510KPF P22	
IC52A1	275P662020	IC-C-MOS - CY7C1019CV33-15	
IC52A2	270P806030	IC - SI-3018LSA	
IC53A1	275P888010	IC-C-MOS - MT48LC16M16A2TG	
IC53A2	275P888010	IC-C-MOS - MT48LC16M16A2TG	
IC53A3	275P888010	IC-C-MOS - MT48LC16M16A2TG	
IC5409	275P464010	IC-C-MOS - TC7WH14FK	
IC54K2	270P880010	IC - 24LC64I/SN	
IC54K3	270P880010	IC - 24LC64I/SN	
IC54K6	270P880010	IC - 24LC64I/SN	
IC54K7	270P880010	IC - 24LC64I/SN	
IC54Z1	275P657050	IC-C-MOS - 24LC256T-I/SN	
IC54Z3	275P657050	IC-C-MOS - 24LC256T-I/SN	
IC54Z4	270P880010	IC - 24LC64I/SN	
IC55A6	275P741020	IC-C-MOS - MT48LC8M16A2TG	
IC55A7	275P741020	IC-C-MOS - MT48LC8M16A2TG	
IC55A8	275P741020	IC-C-MOS - MT48LC8M16A2TG	
IC55E1	275P464010	IC-C-MOS - TC7WH14FK	
IC55E3	275P679010	IC-C-MOS - TC74LCX74FT	
IC5602	279P069030	IC - SN74LVTH244APW	
IC5I01	271P006010	IC - NJM2580M	
IC7000	275P943060	IC-C-MOS - PIC18F252	
IC7001	271P023010	IC - SN74CBTD1G125DBVR	
IC7002	271P023010	IC - SN74CBTD1G125DBVR	
IC7003	271P023010	IC - SN74CBTD1G125DBVR	
IC7A00	**275P942090**	**IC-C-MOS - M306V3FGFP**	
IC7B00	271P023010	IC - SN74CBTD1G125DBVR	
IC7B01	271P023010	IC - SN74CBTD1G125DBVR	
IC7B20	275P533010	IC-C-MOS - M24C64WM6T	
IC7C30	263P154010	IC-C-MOS - SN74HC132DB	
IC7C50	275P419010	IC-C-MOS - SN74AHCT1G126DBV	
IC7C70	270P706020	IC - MAX823REUK	
IC7C80	270P677010	IC - BA033FP	
IC7C85	270P677020	IC - BA05FP	
IC7I01	271P006010	IC - NJM2580M	
IC7K21	270P831010	IC-C-MOS - OPA2350PA	
IC7M01	271P006010	IC - NJM2580M	
IC8A00	270P818020	IC - CXA3506R	
IC8A01	270P915020	IC - RT9161A-33CG	
IC8A04	275P278010	IC-C-MOS - TC74LVX14FT	
IC8B05	270P915020	IC - RT9161A-33CG	
IC8D01	275P982010	IC - MT48LC2M32B2-7	
IC8D02	275P982010	IC - MT48LC2M32B2-7	
IC8D03	275P982010	IC - MT48LC2M32B2-7	
IC8D05	275P982010	IC - MT48LC2M32B2-7	
IC8E02	275P883010	IC-C-MOS - THC63LVDM83R	
IC8F02	275P657050	IC-C-MOS - 24LC256T-I/SN	
IC8F05	274P503020	IC-C-MOS - 74ACT245MTC	
IC8F12	261P135010	FET-HEX - IRF7313	
IC8F13	270P991010	IC - IRU3037CS	
IC8F14	270P915020	IC - RT9161A-33CG	
IC8F15	275P124040	IC-C-MOS - SN74LVC245APWR	
IC8FA1	275P124040	IC-C-MOS - SN74LVC245APWR	
IC8FA2	275P124040	IC-C-MOS - SN74LVC245APWR	
IC8FA3	275P124040	IC-C-MOS - SN74LVC245APWR	
IC8FA4	275P124040	IC-C-MOS - SN74LVC245APWR	
IC9A20	**267P164010**	**HIC - TNY264P**	
IC9A51	267P140020	HIC - STR-F6628	
IC9B04	270P879010	IC - SC1566IM-2.5	
IC9C21	270P928010	IC - BA17809FP	
IC9C22	270P677010	IC - BA033FP	
IC9C23	270P677020	IC - BA05FP	
IC9C24	270P677010	IC - BA033FP	
IC9C25	270P677030	IC - BAO9FP	
IC9D00	270P668020	IC - SI-8050S	
IC9D03	267P076030	HIC - SI-3050C	
IC9D04	267P076030	HIC - SI-3050C	
IC9D05	270P816010	IC - NJM431L	
IC9F01	275P967010	IC-C-MOS - FA5502P	
IC9F02	270P995010	IC - NJM78L20A	

TRANSISTORS

CHIP Type Transistors (Listed by Part No.)

Part No.	Description
260P806010	DTA124EK/UN2112
260P807030	DTC124EKAT146
260P809010	DTC114YK
260P817030	2SA1037K-S
260P817050	2SA1037K-R,S/2SB709AI-R,S
260P817080	2SA1037K-R,S
260P818030	2SC2412K-S
260P818050	2SC2412K-R,S/2SD601AI-R,S
260P818080	2SC2412K-R,S
260P836090	2SC3326-A,B
260P846030	DTC143ZKAT146

Conventional Transistors (By Ref #)

Ref #	Part #	Part Name & Description	[#]
Q5250	261P026010	TR - 2SC3356	
Q7C51	261P114010	TR - 2SA1585STPR	
Q7C66	261P114010	TR - 2SA1585STPR	
Q7K21	260C004010	TR - 2SC1740S-R,S/2SC3311A-R,S	
Q9A00	260C004010	TR - 2SC1740S-R,S/2SC3311A-R,S	

MODEL: WL-82913

[#] Model Legend: [a] WL-82913

Ref #	Part #	Part Name & Description	[#]
Q9A20	260C004010	TR - 2SC1740S-R,S/2SC3311A-R,S	
Q9A21	260C004010	TR - 2SC1740S-R,S/2SC3311A-R,S	
Q9D00	260C004010	TR - 2SC1740S-R,S/2SC3311A-R,S	
Q9D01	260C004050	TR - 2SA933S-R,S/2SA1309A-R,S	
Q9D02	261P101010	TR - PHP21N06T	
Q9D03	260C603010	TR - DTA124ES/UN4112	
Q9D04	261P101010	TR - PHP21N06T	
Q9D05	260C004010	TR - 2SC1740S-R,S/2SC3311A-R,S	
Q9D06	261P101010	TR - PHP21N06T	
Q9D07	260C004010	TR - 2SC1740S-R,S/2SC3311A-R,S	
Q9D10	260C604010	TR - DTC124ES/UN4212	
Q9D11	260C604010	TR - DTC124ES/UN4212	
Q9D12	260C604010	TR - DTC124ES/UN4212	
Q9D13	260C604010	TR - DTC124ES/UN4212	
Q9D14	260C604010	TR - DTC124ES/UN4212	
Q9D15	260C604010	TR - DTC124ES/UN4212	
Q9D18	260C604010	TR - DTC124ES/UN4212	
Q9D19	260C604010	TR - DTC124ES/UN4212	
Q9D20	261P101010	TR - PHP21N06T	
Q9D21	260C004010	TR - 2SC1740S-R,S/2SC3311A-R,S	
Q9F01	261P110010	TR - FS22SM-10	
Q9F02	260P325010	TR - 2SC2655-O,Y	
Q9F03	260P741010	TR - 2SA1020-0,Y	
		DIODES	
D2D28	262P805050	D-CHIP - UDZS5.1B	
D2J91	262P075010	DIODE - RSB6.8S	
D2L80	262P075010	DIODE - RSB6.8S	
D2L81	262P075010	DIODE - RSB6.8S	
D5280	262P089010	DIODE - MA2S728	
D52A0	262P071070	DIODE-LE - SML-210FT	
D5401	262P071070	DIODE-LE - SML-210FT	
D5405	262P802010	D-CHIP - 1SS302	
D7513	264P826010	DIODE-CHIP - DA204K	
D7K21	268P100010	DIODE-PHOTO - SFH235FA	
D7K22	264P045080	DIODE - 1S2076A/1S2471OM	
D7L20	262P075010	DIODE - RSB6.8S	
D7L21	264P212020	D-LED - LN31GPH	
D7L22	264P584020	DIODE-LE - SML1216W-C,D	
D7L23	264P584020	DIODE-LE - SML1216W-C,D	
D8B01	264P882010	D-CHIP - HSB123	
D8B02	264P882010	D-CHIP - HSB123	
D8B04	264P828010	D-CHIP - DAN202U/MA142WK	
D8F00	264P828010	D-CHIP - DAN202U/MA142WK	
D8F01	264P828010	D-CHIP - DAN202U/MA142WK	
D8F03	262P090010	DIODE - M1FP3	
D8F11	264P878010	DIODE-CHIP - HZM27WA	
D9A00	262P031010	DIODE - D6SB80	
D9A02	264P825040	DIODE - ERA15-08	
D9A03	264P461050	DIODE - EQA02-06B/RD5.6EB3	
D9A04	264P045080	DIODE - 1S2076A/1S2471OM	
D9A20	**264P045080**	**DIODE - 1S2076A/1S2471OM**	
D9A21	264P463090	DIODE - EQA02-09D/RD10EB1	
D9A22	264P724010	DIODE - STF14	
D9A23	264P045080	DIODE - 1S2076A/1S2471OM	
D9A24	264P045080	DIODE - 1S2076A/1S2471OM	
D9A54	264P652010	DIODE - UF4007F	
D9A55	264P527020	DIODE - AK04	
D9A56	**264P045080**	**DIODE - 1S2076A/1S2471OM**	

Ref #	Part #	Part Name & Description	[#]
D9A57	264P045080	DIODE - 1S2076A/1S2471OM	
D9A58	**264P045080**	**DIODE - 1S2076A/1S2471OM**	
D9B01	264P828010	D-CHIP - DAN202U/MA142WK	
D9D01	262P094010	DIODE - FME-230A	
D9D02	264P590010	DIODE - EL1Z	
D9D03	264P614010	DIODE - FMB-36	
D9D04	262P115010	DIODE - FMX-22S	
D9D05	264P045080	DIODE - 1S2076A/1S2471OM	
D9D06	264P045080	DIODE - 1S2076A/1S2471OM	
D9D07	264P045080	DIODE - 1S2076A/1S2471OM	
D9D08	264P045080	DIODE - 1S2076A/1S2471OM	
D9D09	264P045080	DIODE - 1S2076A/1S2471OM	
D9D10	264P045080	DIODE - 1S2076A/1S2471OM	
D9D11	264P045080	DIODE - 1S2076A/1S2471OM	
D9D12	264P469090	DIODE - EQA02-28C/RD30EB2	
D9D13	264P484030	DIODE - RD5.6FB2	
D9D17	264P880010	DIODE - RK46	
D9D18	264P470040	DIODE - EQA02-30C/RD33EB1	
D9D25	264P488030	DIODE - RD13FB2	
D9D27	264P045080	DIODE - 1S2076A/1S2471OM	
D9F01	262P031010	DIODE - D6SB80	
D9F02	264P527020	DIODE - AK04	
D9F03	264P825040	DIODE - ERA15-08	
D9F04	264P825040	DIODE - ERA15-08	
D9F05	264P825040	DIODE - ERA15-08	
D9F06	264P590010	DIODE - EL1Z	
D9F07	262P064010	DIODE - SF10L604	
		COILS	
L1A09	409P923060	EMI-F-CHIP - BLM21B272S	
L1A30	321C114010	COIL-RF - 2200MH-J	
L1A31	409P923060	EMI-F-CHIP - BLM21B272S	
L1B09	409P923060	EMI-F-CHIP - BLM21B272S	
L1B30	321C114010	COIL-RF - 2200MH-J	
L1B31	409P923060	EMI-F-CHIP - BLM21B272S	
L2A14	409P777080	EMI-F-CHIP - BLM21P221S	
L2A28	409P777080	EMI-F-CHIP - BLM21P221S	
L2A90	409P777080	EMI-F-CHIP - BLM21P221S	
L2A95	409P777080	EMI-F-CHIP - BLM21P221S	
L2B04	409P777080	EMI-F-CHIP - BLM21P221S	
L2B28	409P777080	EMI-F-CHIP - BLM21P221S	
L2C03	325C146090	COIL-CHIP - 33MH-J	
L2D07	409P777080	EMI-F-CHIP - BLM21P221S	
L2D08	409P777080	EMI-F-CHIP - BLM21P221S	
L2D09	409P777080	EMI-F-CHIP - BLM21P221S	
L2D13	409P777080	EMI-F-CHIP - BLM21P221S	
L2D17	409P777080	EMI-F-CHIP - BLM21P221S	
L2D18	409P777080	EMI-F-CHIP - BLM21P221S	
L2D19	409P777080	EMI-F-CHIP - BLM21P221S	
L2D23	409P777080	EMI-F-CHIP - BLM21P221S	
L2D24	409P777080	EMI-F-CHIP - BLM21P221S	
L2D26	409P777080	EMI-F-CHIP - BLM21P221S	
L2D27	409P777080	EMI-F-CHIP - BLM21P221S	
L2D31	409P777080	EMI-F-CHIP - BLM21P221S	
L2D32	409P777080	EMI-F-CHIP - BLM21P221S	
L2D37	409P777080	EMI-F-CHIP - BLM21P221S	
L2D70	409P777080	EMI-F-CHIP - BLM21P221S	
L2E00	409P777080	EMI-F-CHIP - BLM21P221S	
L2E10	325C146000	COIL-CHIP - 5.6MH-J	

MODEL: WL-82913

[#] Model Legend: [a] WL-82913

Ref #	Part #	Part Name & Description	[#]
L2E20	409P777080	EMI-F-CHIP - BLM21P221S	
L2E31	409P777080	EMI-F-CHIP - BLM21P221S	
L2E38	409P777080	EMI-F-CHIP - BLM21P221S	
L2E46	409P777080	EMI-F-CHIP - BLM21P221S	
L2F01	409P777080	EMI-F-CHIP - BLM21P221S	
L2F25	409P777080	EMI-F-CHIP - BLM21P221S	
L2F40	325C146030	COIL-CHIP - 10MH-J	
L2F60	325C146030	COIL-CHIP - 10MH-J	
L2F80	325C146030	COIL-CHIP - 10MH-J	
L2G01	409P777080	EMI-F-CHIP - BLM21P221S	
L2G25	409P777080	EMI-F-CHIP - BLM21P221S	
L2G50	325C146030	COIL-CHIP - 10MH-J	
L2G70	409P777080	EMI-F-CHIP - BLM21P221S	
L2G71	325C462020	COIL-PEAKING - 56MH-K	
L2G72	325C462020	COIL-PEAKING - 56MH-K	
L2H01	409P923060	EMI-F-CHIP - BLM21B272S	
L2H04	409P923060	EMI-F-CHIP - BLM21B272S	
L2H28	409P923060	EMI-F-CHIP - BLM21B272S	
L2H51	409P923060	EMI-F-CHIP - BLM21B272S	
L2J70	325C146030	COIL-CHIP - 10MH-J	
L2K42	409P777080	EMI-F-CHIP - BLM21P221S	
L2L42	409P777080	EMI-F-CHIP - BLM21P221S	
L2L80	409P923060	EMI-F-CHIP - BLM21B272S	
L2L81	409P923060	EMI-F-CHIP - BLM21B272S	
L2L82	409P923060	EMI-F-CHIP - BLM21B272S	
L2L83	409P923060	EMI-F-CHIP - BLM21B272S	
L2L84	409P923060	EMI-F-CHIP - BLM21B272S	
L2L85	409P923060	EMI-F-CHIP - BLM21B272S	
L3A10	409P923060	EMI-F-CHIP - BLM21B272S	
L3A49	409P923060	EMI-F-CHIP - BLM21B272S	
L5105	351P216010	COIL-CH-CHIP - 857CM-0009	
L5115	351P216010	COIL-CH-CHIP - 857CM-0009	
L51P3	409P777080	EMI-F-CHIP - BLM21P221S	
L51P3	409P777080	EMI-F-CHIP - BLM21P221S	
L51P4	409P777080	EMI-F-CHIP - BLM21P221S	
L51P4	409P777080	EMI-F-CHIP - BLM21P221S	
L5200	325C142050	COIL-CHIP - 100MH-K/J	
L5201	325C240050	COIL-CHIP - 2.2MH-M	
L5202	325C240050	COIL-CHIP - 2.2MH-M	
L5203	325C240050	COIL-CHIP - 2.2MH-M	
L5204	325C240050	COIL-CHIP - 2.2MH-M	
L5205	409P956020	EMI-F-CHIP - BLM18AG221S	
L5206	409P956020	EMI-F-CHIP - BLM18AG221S	
L5207	409P956020	EMI-F-CHIP - BLM18AG221S	
L5208	409P956020	EMI-F-CHIP - BLM18AG221S	
L5250	325C144090	COIL-CHIP - 0.68MH-M -OR-K	
L5253	325C140040	COIL-CHIP - 1.8MH-M -OR-K-OR-J	
L5256	409P956010	EMI-F-CHIP - BLM18PG121S	
L52A0	409P777080	EMI-F-CHIP - BLM21P221S	
L52A1	409P777080	EMI-F-CHIP - BLM21P221S	
L52A2	409P956010	EMI-F-CHIP - BLM18PG121S	
L52A3	409P956010	EMI-F-CHIP - BLM18PG121S	
L52A4	325C240050	COIL-CHIP - 2.2MH-M	
L5301	409P777080	EMI-F-CHIP - BLM21P221S	
L5302	409P777080	EMI-F-CHIP - BLM21P221S	
L5400	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5401	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5402	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5403	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5404	409P955020	EMI-F-CHIP - BLM18BB220SN1	

Ref #	Part #	Part Name & Description	[#]
L5406	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5407	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5470	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5471	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5472	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5473	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5474	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5475	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5476	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L54A0	409P777080	EMI-F-CHIP - BLM21P221S	
L54A0	409P777080	EMI-F-CHIP - BLM21P221S	
L54A1	409P777080	EMI-F-CHIP - BLM21P221S	
L54A1	409P777080	EMI-F-CHIP - BLM21P221S	
L54A4	409P777080	EMI-F-CHIP - BLM21P221S	
L54A4	409P777080	EMI-F-CHIP - BLM21P221S	
L54A5	409P777080	EMI-F-CHIP - BLM21P221S	
L54A5	409P777080	EMI-F-CHIP - BLM21P221S	
L54A6	409P777080	EMI-F-CHIP - BLM21P221S	
L54A6	409P777080	EMI-F-CHIP - BLM21P221S	
L54D0	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L54D1	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L54D3	409P955010	EMI-F-CHIP - BLM18BB221SN1	
L5571	409P956020	EMI-F-CHIP - BLM18AG221S	
L5573	409P956020	EMI-F-CHIP - BLM18AG221S	
L55A0	409P777080	EMI-F-CHIP - BLM21P221S	
L55A1	409P777080	EMI-F-CHIP - BLM21P221S	
L55A2	409P777080	EMI-F-CHIP - BLM21P221S	
L55A3	409P777080	EMI-F-CHIP - BLM21P221S	
L55A4	409P777080	EMI-F-CHIP - BLM21P221S	
L55C0	409P777080	EMI-F-CHIP - BLM21P221S	
L55C0	409P777080	EMI-F-CHIP - BLM21P221S	
L55E3	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55E4	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55E5	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55E6	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55E7	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55F1	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55F2	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55F3	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55F4	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55F5	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55F6	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55F7	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55F8	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55F9	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L55G1	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5601	325C141030	COIL-CHIP - 10MH-K	
L5602	325C141030	COIL-CHIP - 10MH-K	
L56C0	325C141030	COIL-CHIP - 10MH-K	
L56D0	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L56D1	409P955020	EMI-F-CHIP - BLM18BB220SN1	
L5901	325C241050	COIL-CHIP - 15MH-K	
L5903	409P777080	EMI-F-CHIP - BLM21P221S	
L5905	325C141030	COIL-CHIP - 10MH-K	
L5907	409P777080	EMI-F-CHIP - BLM21P221S	
L5907	409P777080	EMI-F-CHIP - BLM21P221S	
L5908	409P777080	EMI-F-CHIP - BLM21P221S	
L5908	409P777080	EMI-F-CHIP - BLM21P221S	
L5910	409P777080	EMI-F-CHIP - BLM21P221S	
L5910	409P777080	EMI-F-CHIP - BLM21P221S	

[#] Model Legend: [a] WL-82913

Ref #	Part #	Part Name & Description	[#]
L5911	409P777080	EMI-F-CHIP - BLM21P221S	
L5911	409P777080	EMI-F-CHIP - BLM21P221S	
L5912	409P777080	EMI-F-CHIP - BLM21P221S	
L5912	409P777080	EMI-F-CHIP - BLM21P221S	
L5913	409P777080	EMI-F-CHIP - BLM21P221S	
L59A0	409P777080	EMI-F-CHIP - BLM21P221S	
L59A1	409P777080	EMI-F-CHIP - BLM21P221S	
L59A1	409P777080	EMI-F-CHIP - BLM21P221S	
L59E0	409P777080	EMI-F-CHIP - BLM21P221S	
L59E0	409P777080	EMI-F-CHIP - BLM21P221S	
L59L0	409P923060	EMI-F-CHIP - BLM21B272S	
L59M1	325C141090	COIL-CHIP - 33MH-K	
L59R0	325C141030	COIL-CHIP - 10MH-K	
L59R2	325C141030	COIL-CHIP - 10MH-K	
L59R3	325C141030	COIL-CHIP - 10MH-K	
L59T0	409P777080	EMI-F-CHIP - BLM21P221S	
L59T1	409P777080	EMI-F-CHIP - BLM21P221S	
L59T2	409P777080	EMI-F-CHIP - BLM21P221S	
L59X0	325C140050	COIL-CHIP - 2.2MH-M/K/J	
L5I14	409P777050	EMI-F-CHIP - BLM21B201S	
L7000	325C240050	COIL-CHIP - 2.2MH-M	
L7005	325C140010	COIL-CHIP - 1MH-M	
L7006	325C140010	COIL-CHIP - 1MH-M	
L7502	325C142050	COIL-CHIP - 100MH-K/J	
L7A90	409P777050	EMI-F-CHIP - BLM21B201S	
L7A99	409P923060	EMI-F-CHIP - BLM21B272S	
L7B20	409P777080	EMI-F-CHIP - BLM21P221S	
L7B91	409P777050	EMI-F-CHIP - BLM21B201S	
L7C00	409P923060	EMI-F-CHIP - BLM21B272S	
L7C63	409P876040	EMI-F-CHIP - CNF20C221S/CKD510JB1H221S	
L7C64	409P876040	EMI-F-CHIP - CNF20C221S/CKD510JB1H221S	
L7C65	409P876040	EMI-F-CHIP - CNF20C221S/CKD510JB1H221S	
L7C66	409P876040	EMI-F-CHIP - CNF20C221S/CKD510JB1H221S	
L7C70	409P923060	EMI-F-CHIP - BLM21B272S	
L7C80	409P777050	EMI-F-CHIP - BLM21B201S	
L7C81	409P923060	EMI-F-CHIP - BLM21B272S	
L7C82	409P923060	EMI-F-CHIP - BLM21B272S	
L7I14	409P777050	EMI-F-CHIP - BLM21B201S	
L7K01	325C121030	COIL-PEAKING - 10MH-K	
L7M14	409P777050	EMI-F-CHIP - BLM21B201S	
L8A00	409P777080	EMI-F-CHIP - BLM21P221S	
L8A01	325C241030	COIL-CHIP - 10MH-K	
L8A02	409P777080	EMI-F-CHIP - BLM21P221S	
L8A03	409P777080	EMI-F-CHIP - BLM21P221S	
L8A04	409P777080	EMI-F-CHIP - BLM21P221S	
L8A06	409P865060	EMI-F-CHIP - BLM11B141S	
L8A07	409P865060	EMI-F-CHIP - BLM11B141S	
L8A08	409P865040	EMI-F-CHIP - BLM11B050SA	
L8A09	409P865040	EMI-F-CHIP - BLM11B050SA	
L8A10	409P865040	EMI-F-CHIP - BLM11B050SA	
L8A11	409P777080	EMI-F-CHIP - BLM21P221S	
L8B01	409P865040	EMI-F-CHIP - BLM11B050SA	
L8B02	409P865040	EMI-F-CHIP - BLM11B050SA	
L8B03	409P865060	EMI-F-CHIP - BLM11B141S	
L8B04	409P865060	EMI-F-CHIP - BLM11B141S	
L8B06	325C241030	COIL-CHIP - 10MH-K	
L8B07	409P865020	EMI-F-CHIP - BLM11A601S	
L8B08	409P865020	EMI-F-CHIP - BLM11A601S	
L8B09	325C241030	COIL-CHIP - 10MH-K	
L8B10	409P865020	EMI-F-CHIP - BLM11A601S	

Ref #	Part #	Part Name & Description	[#]
L8B11	409P865020	EMI-F-CHIP - BLM11A601S	
L8B12	409P865020	EMI-F-CHIP - BLM11A601S	
L8B13	409P865020	EMI-F-CHIP - BLM11A601S	
L8B14	409P865020	EMI-F-CHIP - BLM11A601S	
L8B15	409P865060	EMI-F-CHIP - BLM11B141S	
L8B16	409P865060	EMI-F-CHIP - BLM11B141S	
L8B18	409P865060	EMI-F-CHIP - BLM11B141S	
L8B19	409P865060	EMI-F-CHIP - BLM11B141S	
L8B20	409P865040	EMI-F-CHIP - BLM11B050SA	
L8B21	409P865040	EMI-F-CHIP - BLM11B050SA	
L8B22	409P865040	EMI-F-CHIP - BLM11B050SA	
L8BB1	409P865020	EMI-F-CHIP - BLM11A601S	
L8BB2	409P865020	EMI-F-CHIP - BLM11A601S	
L8C01	409P777080	EMI-F-CHIP - BLM21P221S	
L8C02	409P777080	EMI-F-CHIP - BLM21P221S	
L8C03	409P777080	EMI-F-CHIP - BLM21P221S	
L8D00	409P777080	EMI-F-CHIP - BLM21P221S	
L8D01	409P777080	EMI-F-CHIP - BLM21P221S	
L8D02	409P777080	EMI-F-CHIP - BLM21P221S	
L8D03	409P777080	EMI-F-CHIP - BLM21P221S	
L8D04	409P777080	EMI-F-CHIP - BLM21P221S	
L8D05	409P777080	EMI-F-CHIP - BLM21P221S	
L8D06	409P777080	EMI-F-CHIP - BLM21P221S	
L8D08	409P777080	EMI-F-CHIP - BLM21P221S	
L8D09	409P777080	EMI-F-CHIP - BLM21P221S	
L8D10	409P865020	EMI-F-CHIP - BLM11A601S	
L8EA1	409P777080	EMI-F-CHIP - BLM21P221S	
L8EA2	409P777080	EMI-F-CHIP - BLM21P221S	
L8EA3	409P777080	EMI-F-CHIP - BLM21P221S	
L8EA4	409P777080	EMI-F-CHIP - BLM21P221S	
L8EA5	409P777080	EMI-F-CHIP - BLM21P221S	
L8EA6	409P777080	EMI-F-CHIP - BLM21P221S	
L8EA7	409P777080	EMI-F-CHIP - BLM21P221S	
L8EB1	409P777080	EMI-F-CHIP - BLM21P221S	
L8EB2	409P777080	EMI-F-CHIP - BLM21P221S	
L8EB3	409P777080	EMI-F-CHIP - BLM21P221S	
L8EB4	409P777080	EMI-F-CHIP - BLM21P221S	
L8EB5	409P777080	EMI-F-CHIP - BLM21P221S	
L8EB6	409P777080	EMI-F-CHIP - BLM21P221S	
L8F00	409P865060	EMI-F-CHIP - BLM11B141S	
L8F01	409P865060	EMI-F-CHIP - BLM11B141S	
L8F02	409P777080	EMI-F-CHIP - BLM21P221S	
L8F03	409P865060	EMI-F-CHIP - BLM11B141S	
L8F04	409P865060	EMI-F-CHIP - BLM11B141S	
L8F05	409P865060	EMI-F-CHIP - BLM11B141S	
L8F06	409P865060	EMI-F-CHIP - BLM11B141S	
L8F07	409P865060	EMI-F-CHIP - BLM11B141S	
L8F08	409P865060	EMI-F-CHIP - BLM11B141S	
L8F09	409P865060	EMI-F-CHIP - BLM11B141S	
L8F11	409P865060	EMI-F-CHIP - BLM11B141S	
L8F12	409P865060	EMI-F-CHIP - BLM11B141S	
L8F13	409P865060	EMI-F-CHIP - BLM11B141S	
L8F14	409P865060	EMI-F-CHIP - BLM11B141S	
L8F15	409P777080	EMI-F-CHIP - BLM21P221S	
L8F16	321C140060	COIL-RF - 2.7MH-M	
L8F17	321C140060	COIL-RF - 2.7MH-M	
L8F18	351P250010	COIL-CHOKE - GSTC6018-100M	
L8F19	321C140060	COIL-RF - 2.7MH-M	
L8F20	409P777080	EMI-F-CHIP - BLM21P221S	
L8F21	409P777080	EMI-F-CHIP - BLM21P221S	

MODEL: WL-82913

[#] Model Legend: [a] WL-82913

Ref #	Part #	Part Name & Description	[#]
L8F22	409P865060	EMI-F-CHIP - BLM11B141S	
L8F23	409P777080	EMI-F-CHIP - BLM21P221S	
L8F24	409P777080	EMI-F-CHIP - BLM21P221S	
L8F25	409P865060	EMI-F-CHIP - BLM11B141S	
L8F26	409P865060	EMI-F-CHIP - BLM11B141S	
L8F31	409P777080	EMI-F-CHIP - BLM21P221S	
L8F32	409P777080	EMI-F-CHIP - BLM21P221S	
L8F33	409P777080	EMI-F-CHIP - BLM21P221S	
L8F34	409P777080	EMI-F-CHIP - BLM21P221S	
L8F35	409P777080	EMI-F-CHIP - BLM21P221S	
L8F36	409P777080	EMI-F-CHIP - BLM21P221S	
L8F37	409P777080	EMI-F-CHIP - BLM21P221S	
L8F38	409P777080	EMI-F-CHIP - BLM21P221S	
L8F39	409P777080	EMI-F-CHIP - BLM21P221S	
L8F41	409P777080	EMI-F-CHIP - BLM21P221S	
L8F42	409P777080	EMI-F-CHIP - BLM21P221S	
L8F43	409P777080	EMI-F-CHIP - BLM21P221S	
L8F44	409P777080	EMI-F-CHIP - BLM21P221S	
L9A00	351P203010	FILTER-LINE - SS35V-45022	
L9A01	351P203010	FILTER-LINE - SS35V-45022	
L9A02	351P223010	FILTER-LINE - SLF15N0601	
L9A05	351P079010	CHOKE-COIL - SN12-500J	
L9A06	351P079010	CHOKE-COIL - SN12-500J	
L9A20	321C141070	COIL-RF - 22MH-K	
L9A54	411D021010	CORE-FERRITE - L5 R3.6	
L9A55	411D021010	CORE-FERRITE - L5 R3.6	
L9A56	411D021010	CORE-FERRITE - L5 R3.6	
L9B02	321C140060	COIL-RF - 2.7MH-M	
L9B02	321C140060	COIL-RF - 2.7MH-M	
L9B03	321C140060	COIL-RF - 2.7MH-M	
L9B03	321C140060	COIL-RF - 2.7MH-M	
L9B05	409P777080	EMI-F-CHIP - BLM21P221S	
L9B05	409P777080	EMI-F-CHIP - BLM21P221S	
L9B06	409P777080	EMI-F-CHIP - BLM21P221S	
L9B06	409P777080	EMI-F-CHIP - BLM21P221S	
L9B07	409P777080	EMI-F-CHIP - BLM21P221S	
L9B07	409P777080	EMI-F-CHIP - BLM21P221S	
L9B09	409P777080	EMI-F-CHIP - BLM21P221S	
L9B09	409P777080	EMI-F-CHIP - BLM21P221S	
L9B10	409P777080	EMI-F-CHIP - BLM21P221S	
L9B10	409P777080	EMI-F-CHIP - BLM21P221S	
L9B11	409P777080	EMI-F-CHIP - BLM21P221S	
L9B11	409P777080	EMI-F-CHIP - BLM21P221S	
L9B13	409P777080	EMI-F-CHIP - BLM21P221S	
L9B13	409P777080	EMI-F-CHIP - BLM21P221S	
L9B14	409P777080	EMI-F-CHIP - BLM21P221S	
L9B14	409P777080	EMI-F-CHIP - BLM21P221S	
L9B15	409P777080	EMI-F-CHIP - BLM21P221S	
L9B15	409P777080	EMI-F-CHIP - BLM21P221S	
L9B24	409P957010	EMI-F-CHIP - NFE61PT102E1H9	
L9D00	321C141030	COIL-RF - 10MH-K	
L9D01	321C141010	COIL-RF - 6.8MH-M	
L9D02	321C141010	COIL-RF - 6.8MH-M	
L9D03	351P226010	COIL-CHOKE - D1512C4-V 150UH	
L9D04	321C141030	COIL-RF - 10MH-K	
L9D05	321C140060	COIL-RF - 2.7MH-M	
L9D06	321C141070	COIL-RF - 22MH-K	
L9D07	321C141030	COIL-RF - 10MH-K	
L9D08	321C141030	COIL-RF - 10MH-K	
L9D09	321C141030	COIL-RF - 10MH-K	

Ref #	Part #	Part Name & Description	[#]
L9D11	321C140060	COIL-RF - 2.7MH-M	
L9F02	351P079020	CHOKE-COIL - SN13-500	
L9F03	351P079020	CHOKE-COIL - SN13-500	
LC2C02	409P876020	EMI-F-CHIP - CNF20C470S/CKD510JB1H470S	
LC2C03	409P876020	EMI-F-CHIP - CNF20C470S/CKD510JB1H470S	
LC2C07	409P876020	EMI-F-CHIP - CNF20C470S/CKD510JB1H470S	

TRANSFORMERS

Ref #	Part #	Part Name & Description	[#]
T9A20	350P796010	TRANS-PWR - ETS19AB1M3AG	
T9A50	350P808010	TRANS-PWR - ETS7983-39	
T9F01	350P767010	TRANS - DC-08068-5	

RESISTORS

CHIP Type Resistors (Listed by value)

Part No.	Value	Part No.	Value
103P509050	1/16W 0OHM	103P492050	1/16W 1K-F
103P488000	1/4W 1-J	103P502050	1/16W 1K-J
103P509000	1/16W 6.8-J	103P502060	1/16W 1.2K-J
103P500010	1/16W 10-J	103P492090	1/16W 1.5K-F
103P793030	1/16W 22-F	103P502070	1/16W 1.5K-J
103P500050	1/16W 22-J	103P502080	1/16W 1.8K-J
103P400050	1/8W 22-J	103P493020	1/16W 2K-F
103P793040	1/16W 24-F	103P493030	1/16W 2.2K-F
103P500060	1/16W 27-J	103P502090	1/16W 2.2K-J
103P500070	1/16W 33-J	103P503000	1/16W 2.7K-J
103P910070	1/16W 33-J	103P493060	1/16W 3K-F
103P500070	1/16W 33-J	103P503010	1/16W 3.3K-J
103P500080	1/16W 39-J	103P493090	1/16W 3.9K-F
103P500090	1/16W 47-J	103P503020	1/16W 3.9K-J
103P844030	1/16W 56-D	103P494010	1/16W 4.7K-F
103P501000	1/16W 56-J	103P503030	1/16W 4.7K-J
103P401000	1/8W 56-J	103P494020	1/16W 5.1K-F
103P501010	1/16W 68-J	103P503040	1/16W 5.6K-J
103P794060	1/16W 75-F	103P503050	1/16W 6.8K-J
103P509090	1/4W 75-J	103P494070	1/16W 8.2K-F
103P794070	1/16W 82-F	103P503060	1/16W 8.2K-J
103P501020	1/16W 82-J	103P494090	1/16W 10K-F
103P501030	1/16W 100-J	103P503070	1/16W 10K-J
103P401030	1/8W 100-J	103P503080	1/16W 12K-J
103P501040	1/16W 120-J	103P495020	1/16W 13K-F
103P490050	1/16W 150-F	103P503090	1/16W 15K-J
103P401050	1/8W 150-J	103P495040	1/16W 16K-F
103P490060	1/16W 160-F	103P495050	1/16W 18K-F
103P490090	1/16W 220-F	103P504020	1/16W 27K-J
103P501070	1/16W 220-J	103P496000	1/16W 30K-F
103P491000	1/16W 240-F	103P504030	1/16W 33K-J
103P501080	1/16W 270-J	103P496040	1/16W 43K-F
103P401080	1/8W 270-J	103P504050	1/16W 47K-J
103P491020	1/16W 300-F	103P914050	1/16W 47K-J
103P501090	1/16W 330-J	103P504060	1/16W 56K-J
103P401090	1/8W 330-J	103P504070	1/16W 68K-J
103P491040	1/16W 360-F	103P509090	1/16W 75K-J
103P491050	1/16W 390-F	103P497030	1/16W 100K-F
103P502010	1/16W 470-J	103P504090	1/16W 100K-J
103P491080	1/16W 510-F	103P497050	1/16W 120K-F
103P502020	1/16W 560-J	103P505000	1/16W 120K-J
103P492000	1/16W 620-F	103P505090	1/16W 680K-J
103P502030	1/16W 680-J	103P506000	1/16W 820K-J
103P502040	1/16W 820-J	103P506010	1/16W 1M-J

Ref #	Part #	Part Name & Description	[#]
	Conventional Resistors (By Ref #)		
Ref #	Part #	Part Name & Description	[#]
R3E02	103P713050	R-CARBON - 1/4W 6.8K-J	
R3E03	103P713050	R-CARBON - 1/4W 6.8K-J	
R3E04	103P712080	R-CARBON - 1/4W 1.8K-J	
R3E05	103P712080	R-CARBON - 1/4W 1.8K-J	
R3E06	103P713070	R-CARBON - 1/4W 10K-J	
R3E07	109D151010	R-CARBON - 1/4W 2.2-J	
R3E08	109D151010	R-CARBON - 1/4W 2.2-J	
R3E09	109D151010	R-CARBON - 1/4W 2.2-J	
R3E10	109D151010	R-CARBON - 1/4W 2.2-J	
R7044	103C288040	R-METAL-CP - 2W 2.2-J	
R7052	103P713030	R-CARBON - 1/4W 4.7K-J	
R7C55	103C178010	R-METAL - 1W 1.2-J	
R7C68	103C178010	R-METAL - 1W 1.2-J	
R7K01	103P712050	R-CARBON - 1/4W 1K-J	
R7K02	103P713010	R-CARBON - 1/4W 3.3K-J	
R7K05	103P713050	R-CARBON - 1/4W 6.8K-J	
R7K21	103P711080	R-CARBON - 1/4W 270-J	
R7K22	103P714050	R-CARBON - 1/4W 47K-J	
R7K23	103P713080	R-CARBON - 1/4W 12K-J	
R7K24	103P713080	R-CARBON - 1/4W 12K-J	
R7K25	103P713080	R-CARBON - 1/4W 12K-J	
R7K26	103P715030	R-CARBON - 1/4W 220K-J	
R7K27	103P713070	R-CARBON - 1/4W 10K-J	
R7K28	103P711050	R-CARBON - 1/4W 150-J	
R7K29	103P712060	R-CARBON - 1/4W 1.2K-J	
R7K30	103P713070	R-CARBON - 1/4W 10K-J	
R7K31	103P715030	R-CARBON - 1/4W 220K-J	
R7K32	103P713030	R-CARBON - 1/4W 4.7K-J	
R7K34	103P713000	R-CARBON - 1/4W 2.7K-J	
R7K35	103P711030	R-CARBON - 1/4W 100-J	
R7K36	103P710090	R-CARBON - 1/4W 47-J	
R7L26	103P462090	R-METAL - 1/4W 1.5K-F	
R7L27	103P463030	R-METAL - 1/4W 2.2K-F	
R7L28	103P463070	R-METAL - 1/4W 3.3K-F	
R7L29	103P464030	R-METAL - 1/4W 5.6K-F	
R7L30	103P465010	R-METAL - 1/4W 12K-F	
R7L31	103P466010	R-METAL - 1/4W 33K-F	
R7L32	103P466070	R-METAL - 1/4W 56K-F	
R9A00	109D036020	R-COMP - 1/2W 4.7M-K	
R9A01	109C010010	R-COMP - 1/2W 1M-K	
R9A02	**102P338040**	**R-CEMENT-WIRE - 15W 2.2-K**	
R9A03	103C391020	R-METAL-P - 3W 82-J	
R9A04	103P145050	R-CARBON - 1/2W 330K-J	
R9A05	**103P145050**	**R-CARBON - 1/2W 330K-J**	
R9A06	103P714020	R-CARBON - 1/4W 27K-J	
R9A07	109C010010	R-COMP - 1/2W 1M-K	
R9A08	109C010010	R-COMP - 1/2W 1M-K	
R9A20	103P142070	R-CARBON - 1/2W 1.5K-J	
R9A21	103P710090	R-CARBON - 1/4W 47-J	
R9A22	103P712050	R-CARBON - 1/4W 1K-J	
R9A23	103P713070	R-CARBON - 1/4W 10K-J	
R9A24	103P713070	R-CARBON - 1/4W 10K-J	
R9A25	103P713010	R-CARBON - 1/4W 3.3K-J	
R9A26	103P713010	R-CARBON - 1/4W 3.3K-J	
R9A27	103P713010	R-CARBON - 1/4W 3.3K-J	
R9A28	103P713010	R-CARBON - 1/4W 3.3K-J	
R9A29	103P713070	R-CARBON - 1/4W 10K-J	
R9A72	103C194060	R-METAL - 3W 56K-J	
R9A73	103C194060	R-METAL - 3W 56K-J	
R9A74	103C197020	R-METAL - 3W 0.22-J	
R9A75	103C197020	R-METAL - 3W 0.22-J	
R9A76	103P712030	R-CARBON - 1/4W 680-J	
R9A77	103P710010	R-CARBON - 1/4W 10-J	
R9A78	103P142090	R-CARBON - 1/2W 2.2K-J	
R9A79	103P713010	R-CARBON - 1/4W 3.3K-J	
R9A80	103C197020	R-METAL - 3W 0.22-J	
R9A81	103C194060	R-METAL - 3W 56K-J	
R9A82	103C194060	R-METAL - 3W 56K-J	
R9A83	103C194060	R-METAL - 3W 56K-J	
R9C22	103C398050	R-METAL-P - 3W 2.7-K	
R9C25	103C398020	R-METAL-P - 3W 1.5-K	
R9C26	103C398010	R-METAL-P - 3W 1.2-K	
R9D00	**103P710050**	**R-CARBON - 1/4W 22-J**	
R9D07	103P714010	R-CARBON - 1/4W 22K-J	
R9D09	103P713070	R-CARBON - 1/4W 10K-J	
R9D10	103P713070	R-CARBON - 1/4W 10K-J	
R9D11	103P713070	R-CARBON - 1/4W 10K-J	
R9D12	103P713070	R-CARBON - 1/4W 10K-J	
R9D13	103P713070	R-CARBON - 1/4W 10K-J	
R9D14	103P713070	R-CARBON - 1/4W 10K-J	
R9D15	103P711060	R-CARBON - 1/4W 180-J	
R9D16	103P711030	R-CARBON - 1/4W 100-J	
R9D17	103P712050	R-CARBON - 1/4W 1K-J	
R9D18	109D151030	R-CARBON - 1/4W 4.7-J	
R9D19	103P712040	R-CARBON - 1/4W 820-J	
R9D20	103P719050	R-CARBON - 1/4W 0OHM (MAX 3A)	
R9D22	103P714090	R-CARBON - 1/4W 100K-J	
R9D23	103P715010	R-CARBON - 1/4W 150K-J	
R9D24	103P711030	R-CARBON - 1/4W 100-J	
R9D25	103P713030	R-CARBON - 1/4W 4.7K-J	
R9D26	103P715050	R-CARBON - 1/4W 330K-J	
R9D27	103P714080	R-CARBON - 1/4W 82K-J	
R9D28	103P713070	R-CARBON - 1/4W 10K-J	
R9D29	103P712050	R-CARBON - 1/4W 1K-J	
R9D30	103P712050	R-CARBON - 1/4W 1K-J	
R9D31	103P714090	R-CARBON - 1/4W 100K-J	
R9D32	103P715010	R-CARBON - 1/4W 150K-J	
R9D33	103P711030	R-CARBON - 1/4W 100-J	
R9D34	103P713030	R-CARBON - 1/4W 4.7K-J	
R9D35	103P714080	R-CARBON - 1/4W 82K-J	
R9D36	103P715050	R-CARBON - 1/4W 330K-J	
R9D37	103P712040	R-CARBON - 1/4W 820-J	
R9D38	103P719050	R-CARBON - 1/4W 0OHM (MAX 3A)	
R9D40	103P142010	R-CARBON - 1/2W 470-J	
R9D41	103P712050	R-CARBON - 1/4W 1K-J	
R9D42	103P712090	R-CARBON - 1/4W 2.2K-J	
R9D43	103P465000	R-METAL - 1/4W 2.4K-F	
R9D44	103P463050	R-METAL - 1/4W 2.7K-F	
R9D45	103P712080	R-CARBON - 1/4W 1.8K-J	
R9D48	103P714010	R-CARBON - 1/4W 22K-J	
R9D49	103P713070	R-CARBON - 1/4W 10K-J	
R9D50	103P714010	R-CARBON - 1/4W 22K-J	
R9D51	103P713070	R-CARBON - 1/4W 10K-J	
R9D54	103P714010	R-CARBON - 1/4W 22K-J	
R9D55	103P713070	R-CARBON - 1/4W 10K-J	
R9D56	103P713070	R-CARBON - 1/4W 10K-J	
R9D61	103P711070	R-CARBON - 1/4W 220-J	
R9D62	103P711070	R-CARBON - 1/4W 220-J	

Ref #	Part #	Part Name & Description	[#]
R9D63	103P710050	R-CARBON - 1/4W 22-J	
R9D64	103P712080	R-CARBON - 1/4W 1.8K-J	
R9D65	103P710010	R-CARBON - 1/4W 10-J	
R9D66	103P711080	R-CARBON - 1/4W 270-J	
R9D67	103P714090	R-CARBON - 1/4W 100K-J	
R9D68	103P715010	R-CARBON - 1/4W 150K-J	
R9D69	103P711030	R-CARBON - 1/4W 100-J	
R9D70	103P713030	R-CARBON - 1/4W 4.7K-J	
R9D71	103P715050	R-CARBON - 1/4W 330K-J	
R9D72	103P714080	R-CARBON - 1/4W 82K-J	
R9D73	103P712080	R-CARBON - 1/4W 1.8K-J	
R9D74	103P715000	R-CARBON - 1/4W 120K-J	
R9F01	109P114030	R-METAL - 5W 0.1-K	
R9F02	103P467050	R-METAL - 1/4W 120K-F	
R9F03	103P467050	R-METAL - 1/4W 120K-F	
R9F04	103P467050	R-METAL - 1/4W 120K-F	
R9F05	103P463020	R-METAL - 1/4W 2K-F	
R9F06	103P464090	R-METAL - 1/4W 10K-F	
R9F07	103P466050	R-METAL - 1/4W 47K-F	
R9F08	103P461080	R-METAL - 1/4W 510-F	
R9F09	103P462050	R-METAL - 1/4W 1K-F	
R9F10	103P466010	R-METAL - 1/4W 33K-F	
R9F11	103P469030	R-METAL - 1/4W 680K-F	
R9F12	103P710060	R-CARBON - 1/4W 27-J	
R9F13	103P465090	R-METAL - 1/4W 27K-F	
R9F14	103P465090	R-METAL - 1/4W 27K-F	
R9F15	103P466030	R-METAL - 1/4W 39K-F	
R9F16	103C194090	R-METAL - 3W 100K-J	
R9F17	103P461010	R-METAL - 1/4W 270-F	
R9F18	103P710050	R-CARBON - 1/4W 22-J	
R9F20	103P467050	R-METAL - 1/4W 120K-F	
R9F21	103P467050	R-METAL - 1/4W 120K-F	
R9F22	103P467050	R-METAL - 1/4W 120K-F	
R9F23	103C194090	R-METAL - 3W 100K-J	
R9F24	103C194090	R-METAL - 3W 100K-J	

CAPACITORS

CHIP Type Capacitors (Listed by Value)

Part No.	Value	Part No.	Value
154P340010	CK50V 1P-C	141P143020	B16V 0.082M-K
154P340030	CK50V 2P-C	141P143030	B16V 0.1M-K
154P340040	50V 3P-C	141P139030	B25V 0.1M-K
154P341010	CH50V 10P-C	141P144020	F25V 0.1M-Z
154P341030	CH50V 12P-J	141P134090	F50V 0.1M-Z
154P321040	SL50V 12P-J	141P135080	F50V/25V 0.1M-Z
154P341050	CH50V 15P-J	141P139070	B16V 0.22M-K
154P341090	CH50V 22P-J	141P146080	B10V 0.47M-K
154P344050	CH50V 270P-J	141P147020	B10V/6.3V 1M-K
154P342010	CH50V 27P-J	141P134070	B16V 1M-K
154P342030	CH50V 33P-J	141P144060	F16V 1M-Z
154P342050	CH50V 39P-J	181P526010	50V 1M-M
154P342090	CH50V 56P-J	181P509080	50V 1M-M
154P343050	CH50V 100P-J	181P526020	50V 2.2M-M
154P344010	CH50V 180P-J	141P133010	B10V 3.3M-M
141P140010	B50V 220P-K	181P532020	16V 4.7M-M 105C
141P130010	B50V 220P-K	181P524090	35V 4.7M-M 105C
154P344030	CH50V 220P-J	181P502030	16V 10M-M
154P355000	SL50V 390P-J	181P508080	16V 10M-M
141P140050	B50V 470P-K	181P522030	16V 10M-M 105C
154P345010	CH50V 470P-J	181P515000	35V 10M-M
154P355020	SL50V 470P-J	181P525000	35V 10M-M 105C
154P345030	CH25V 560P-J	181P502040	16V 22M-M
154P345050	CH25V 680P-J	181P522040	16V 22M-M 105C
154P345070	CH25V 820P-J	181P525010	35V 22M-M 105C
141P140090	B50V 1000P-K	181P503090	25V 33M-M
154P345090	CH25V 1000P-J	181P500030	6.3V 47M-M
141P143050	F50V 1000P-Z/	181P520030	6.3V 47M-M
141P141010	B50V 1500P-K	181P522060	6V 47M-M
141P141030	B50V 2200P-K	181P502070	16V 100M-M
141P142010	B50V 0.01M-K	181P880070	6.3V 100M-M
141P143080	F50V 0.01M-Z	181P520040	6.3V 100M-M
172P391030	16V 0.01M-J	189P206010	4V 150M-M
141P144010	F50V 0.047M-Z	181P528010	4V 220M-M 105C
141P142090	B25V 0.047M-K	181P500060	6.3V 220M-M
141P143010	B25V 0.068M-K	181P520050	6.3V 220M-M 105C

CAPACITORS AND TRIMMERS

Conventional Capacitors (By Ref #)

Ref #	Part #	Part Name & Description	[#]
C1A10	181P352040	C-ELEC - 16V 100M-M	
C1A12	181P124040	C-ELEC-NP - 50V 10M-M	
C1A23	172P262010	C-M-POLY - 50V 0.047M-J	
C1A24	181P210040	C-ELEC - 6.3V 100M-M	
C1B10	181P352040	C-ELEC - 16V 100M-M	
C1B12	181P124040	C-ELEC-NP - 50V 10M-M	
C1B23	172P262010	C-M-POLY - 50V 0.047M-J	
C1B24	181P210040	C-ELEC - 6.3V 100M-M	
C2A06	181P352040	C-ELEC - 16V 100M-M	
C2A24	181P352040	C-ELEC - 16V 100M-M	
C2A66	181P352040	C-ELEC - 16V 100M-M	
C2A68	181P352040	C-ELEC - 16V 100M-M	
C2A95	181P352040	C-ELEC - 16V 100M-M	
C2B01	181P352040	C-ELEC - 16V 100M-M	
C2B24	181P352040	C-ELEC - 16V 100M-M	
C2B70	181P352040	C-ELEC - 16V 100M-M	
C2B90	181P352040	C-ELEC - 16V 100M-M	
C2E01	181P352030	C-ELEC - 16V 47M-M	
C2E02	181P355050	C-ELEC - 50V 10M-M	
C2E21	181P355050	C-ELEC - 50V 10M-M	
C2E22	181P355050	C-ELEC - 50V 10M-M	
C2E23	181P352040	C-ELEC - 16V 100M-M	
C2E39	181P352030	C-ELEC - 16V 47M-M	
C2E49	181P355050	C-ELEC - 50V 10M-M	
C2E65	181P352040	C-ELEC - 16V 100M-M	
C2E67	181P352040	C-ELEC - 16V 100M-M	
C2E92	181P355050	C-ELEC - 50V 10M-M	
C2F00	181P352070	C-ELEC - 16V 470M-M	
C2F10	181P352040	C-ELEC - 16V 100M-M	
C2F11	181P351040	C-ELEC - 10V 100M-M	
C2F32	181P352040	C-ELEC - 16V 100M-M	
C2F60	181P352030	C-ELEC - 16V 47M-M	
C2F64	181P352010	C-ELEC - 16V 22M-M	
C2F80	181P355080	C-ELEC - 50V 47M-M	
C2F92	181P352030	C-ELEC - 16V 47M-M	
C2G00	181P352070	C-ELEC - 16V 470M-M	
C2G32	181P352040	C-ELEC - 16V 100M-M	
C2G40	181P352030	C-ELEC - 16V 47M-M	

MODEL: WL-82913

[#] Model Legend: [a] WL-82913

Ref #	Part #	Part Name & Description	[#]
C2G50	181P352030	C-ELEC - 16V 47M-M	
C2G70	181P352030	C-ELEC - 16V 47M-M	
C2G72	181P352030	C-ELEC - 16V 47M-M	
C2H01	181P352050	C-ELEC - 16V 220M-M	
C2H03	181P352050	C-ELEC - 16V 220M-M	
C2H29	181P352040	C-ELEC - 16V 100M-M	
C2H49	181P352050	C-ELEC - 16V 220M-M	
C2J70	181P351050	C-ELEC - 10V 220M-M	
C2J71	181P351070	C-ELEC - 10V 470M-M	
C2J72	181P351070	C-ELEC - 10V 470M-M	
C2J73	181P352040	C-ELEC - 16V 100M-M	
C2J75	181P122090	C-ELEC-NP - 25V 22M-M	
C2J76	181P122090	C-ELEC-NP - 25V 22M-M	
C2J77	181P355060	C-ELEC - 50V 22M-M	
C2J78	181P355060	C-ELEC - 50V 22M-M	
C2K01	181P219010	C-ELEC - 16V 10M-M	
C2K03	181P219010	C-ELEC - 16V 10M-M	
C2K08	181P219010	C-ELEC - 16V 10M-M	
C2K10	181P219010	C-ELEC - 16V 10M-M	
C2K24	181P219010	C-ELEC - 16V 10M-M	
C2K32	181P352040	C-ELEC - 16V 100M-M	
C2K50	181P219010	C-ELEC - 16V 10M-M	
C2K52	181P122070	C-ELEC-NP - 25V 10M-M	
C2K54	181P122070	C-ELEC-NP - 25V 10M-M	
C2K80	181P352030	C-ELEC - 16V 47M-M	
C2L01	181P219010	C-ELEC - 16V 10M-M	
C2L03	181P219010	C-ELEC - 16V 10M-M	
C2L08	181P219010	C-ELEC - 16V 10M-M	
C2L10	181P219010	C-ELEC - 16V 10M-M	
C2L15	181P219010	C-ELEC - 16V 10M-M	
C2L17	181P219010	C-ELEC - 16V 10M-M	
C2L35	181P352040	C-ELEC - 16V 100M-M	
C2L49	181P122070	C-ELEC-NP - 25V 10M-M	
C2L50	181P219010	C-ELEC - 16V 10M-M	
C2L60	181P122070	C-ELEC-NP - 25V 10M-M	
C2L63	181P122070	C-ELEC-NP - 25V 10M-M	
C3A13	181P352030	C-ELEC - 16V 47M-M	
C3A22	181P352030	C-ELEC - 16V 47M-M	
C3A29	181P352030	C-ELEC - 16V 47M-M	
C3A30	181P352030	C-ELEC - 16V 47M-M	
C3A32	181P219010	C-ELEC - 16V 10M-M	
C3A34	181P355030	C-ELEC - 50V 3.3M-M	
C3A47	181P219010	C-ELEC - 16V 10M-M	
C3A52	181P352030	C-ELEC - 16V 47M-M	
C3E01	**181P354050**	**C-ELEC - 35V 47M-M**	
C3E02	181P355010	C-ELEC - 50V 1M-M	
C3E03	172P331010	C-POLY - 50V 6800P-J	
C3E04	181P355010	C-ELEC - 50V 1M-M	
C3E05	172P331010	C-POLY - 50V 6800P-J	
C3E06	181P355050	C-ELEC - 50V 10M-M	
C3E07	181P353090	C-ELEC - 5V 2200M-M	
C3E08	142P024060	C-CER - BF50V 0.1M-Z	
C3E09	172P262050	C-M-POLY - 50V 0.1M-J	
C3E10	172P262050	C-M-POLY - 50V 0.1M-J	
C3E11	172P262050	C-M-POLY - 50V 0.1M-J	
C3E12	172P262050	C-M-POLY - 50V 0.1M-J	
C3E13	189D180010	C-ELEC-NP - 50V 6.8M-K	
C3E14	189D180010	C-ELEC-NP - 50V 6.8M-K	
C5200	181P184020	C-ELEC - 35V 100M-M	
C5203	181P352060	C-ELEC - 16V 330M-M	

Ref #	Part #	Part Name & Description	[#]
C5205	181P352060	C-ELEC - 16V 330M-M	
C5207	181P352060	C-ELEC - 16V 330M-M	
C5209	181P352060	C-ELEC - 16V 330M-M	
C5213	181P353060	C-ELEC - 25V 330M-M	
C5215	181P353060	C-ELEC - 25V 330M-M	
C5218	181P350060	C-ELEC - 3V 1000M-M	
C5301	**141P143030**	**C-CER-CHIP - B16V 0.1M-K**	
C7004	181P182020	C-ELEC - 16V 470M-M 105C	
C7047	181P351070	C-ELEC - 10V 470M-M	
C7049	181P355090	C-ELEC - 50V 100M-M	
C7A00	**141P140090**	**C-CER-CHIP - B50V 1000P-K**	
C7B99	181P352030	C-ELEC - 16V 47M-M	
C7C00	181P351040	C-ELEC - 10V 100M-M	
C7C51	181P352050	C-ELEC - 16V 220M-M	
C7C65	181P352050	C-ELEC - 16V 220M-M	
C7C71	181P351040	C-ELEC - 10V 100M-M	
C7C81	181P351040	C-ELEC - 10V 100M-M	
C7C82	181P351040	C-ELEC - 10V 100M-M	
C7C85	181P351040	C-ELEC - 10V 100M-M	
C7C86	181P351040	C-ELEC - 10V 100M-M	
C7C88	181P352030	C-ELEC - 16V 47M-M	
C7C89	181P351040	C-ELEC - 10V 100M-M	
C7K01	181P352030	C-ELEC - 16V 47M-M	
C7K20	155P314040	C-CER - SL50V 220P-J	
C7K21	181P355050	C-ELEC - 50V 10M-M	
C7K23	181P352030	C-ELEC - 16V 47M-M	
C7K25	172P262050	C-M-POLY - 50V 0.1M-J	
C7K26	172P262050	C-M-POLY - 50V 0.1M-J	
C7K27	181P355010	C-ELEC - 50V 1M-M	
C7K28	181P355050	C-ELEC - 50V 10M-M	
C7K30	142P026010	C-CER - BB16V 0.01M-M	
C8C01	**141P143030**	**C-CER-CHIP - B16V 0.1M-K**	
C8C02	141P143030	C-CER-CHIP - B16V 0.1M-K	
C9A00	189P153040	C-M-POLY - 250VAC 0.1M-M	
C9A01	189P153040	C-M-POLY - 250VAC 0.1M-M	
C9A04	189P185090	C-CER - AC250V E2200P-M	
C9A05	**189P185090**	**C-CER - AC250V E2200P-M**	
C9A06	189P153040	C-M-POLY - 250VAC 0.1M-M	
C9A07	189P185090	C-CER - AC250V E2200P-M	
C9A08	189P185090	C-CER - AC250V E2200P-M	
C9A09	189P185090	C-CER - AC250V E2200P-M	
C9A10	189P185090	C-CER - AC250V E2200P-M	
C9A11	189P152080	C-M-POLY - AC125/250V 0.015M-M	
C9A12	189P152080	C-M-POLY - AC125/250V 0.015M-M	
C9A13	**189P185070**	**C-CER - AC250V E1000P-M**	
C9A14	189P185070	C-CER - AC250V E1000P-M	
C9A15	189P185070	C-CER - AC250V E1000P-M	
C9A16	189P185070	C-CER - AC250V E1000P-M	
C9A20	**181P199080**	**C-ELEC - 200V 47M-M/Q**	
C9A21	172P262050	C-M-POLY - 50V 0.1M-J	
C9A22	154P270050	C-CER - SL1KV 22P-J	
C9A23	181P355010	C-ELEC - 50V 1M-M	
C9A24	181P355040	C-ELEC - 50V 4.7M-M	
C9A25	142P010090	C-CER - B500V 470P-K	
C9A26	181P182030	C-ELEC - 16V 1000M-M 105C	
C9A27	181P352060	C-ELEC - 16V 330M-M	
C9A28	181P350060	C-ELEC - 3V 1000M-M	
C9A69	172P339070	C-POLY - 50V 560P-J	
C9A70	154P400060	C-CER - B1KV 1500P-K	
C9A71	181P186010	C-ELEC - 50V 220M-M 105C	

MODEL: WL-82913

[#] Model Legend: [a] WL-82913

Ref #	Part #	Part Name & Description	[#]
C9A72	172P339070	C-POLY - 50V 560P-J	
C9A74	172P083010	C-PLAST-PP - 400V 0.015M-K	
C9A75	185D122050	C-ELEC - H200V 1000M-M	
C9A76	185D122050	C-ELEC - H200V 1000M-M	
C9B01	181P182030	C-ELEC - 16V 1000M-M 105C	
C9B02	181P182030	C-ELEC - 16V 1000M-M 105C	
C9B10	181P182030	C-ELEC - 16V 1000M-M 105C	
C9C25	181P352030	C-ELEC - 16V 47M-M	
C9C27	181P352050	C-ELEC - 16V 220M-M	
C9C30	181P352030	C-ELEC - 16V 47M-M	
C9C32	181P352030	C-ELEC - 16V 47M-M	
C9C35	181P351080	C-ELEC - 10V 1000M-M	
C9C37	181P352030	C-ELEC - 16V 47M-M	
C9C40	181P351070	C-ELEC - 10V 470M-M	
C9C42	181P351070	C-ELEC - 10V 470M-M	
C9C51	181P352030	C-ELEC - 16V 47M-M	
C9C53	181P352030	C-ELEC - 16V 47M-M	
C9D00	**142P024060**	**C-CER - BF50V 0.1M-Z**	
C9D01	181P734010	C-ELEC - 16V 3300M-M	
C9D02	181P734010	C-ELEC - 16V 3300M-M	
C9D03	181P356030	C-ELEC - 50V 1000M-M	
C9D05	181P352030	C-ELEC - 16V 47M-M	
C9D06	181P351030	C-ELEC - 10V 47M-M	
C9D07	181P185090	C-ELEC - 50V 47M-M 105C	
C9D08	181P185090	C-ELEC - 50V 47M-M 105C	
C9D09	142P023080	C-CER - BF50V 0.01M-Z	
C9D10	181P735040	C-ELEC - 25V 1500M-M	
C9D11	142P020090	C-CER - B50V 1000P-K	
C9D12	181P734010	C-ELEC - 16V 3300M-M	
C9D13	181P735040	C-ELEC - 25V 1500M-M	
C9D14	181P734010	C-ELEC - 16V 3300M-M	
C9D15	181P735040	C-ELEC - 25V 1500M-M	
C9D16	172P261030	C-M-POLY - 50V 0.01M-J	
C9D17	181P351030	C-ELEC - 10V 47M-M	
C9D18	142P023080	C-CER - BF50V 0.01M-Z	
C9D19	181P352030	C-ELEC - 16V 47M-M	
C9D20	181P353060	C-ELEC - 25V 330M-M	
C9D21	181P353060	C-ELEC - 25V 330M-M	
C9D22	142P023080	C-CER - BF50V 0.01M-Z	
C9D23	181P352030	C-ELEC - 16V 47M-M	
C9D24	181P351030	C-ELEC - 10V 47M-M	
C9D25	181P351030	C-ELEC - 10V 47M-M	
C9D26	181P352030	C-ELEC - 16V 47M-M	
C9D27	181P359080	C-ELEC - 50V 0.22M-M	
C9D30	154P400010	C-CER - B1KV 220P-K	
C9D31	181P734010	C-ELEC - 16V 3300M-M	
C9D32	154P400010	C-CER - B1KV 220P-K	
C9D33	181P734010	C-ELEC - 16V 3300M-M	
C9D34	154P400010	C-CER - B1KV 220P-K	
C9D35	154P400010	C-CER - B1KV 220P-K	
C9D36	181P735040	C-ELEC - 25V 1500M-M	
C9D37	172P262050	C-M-POLY - 50V 0.1M-J	
C9D38	181P351030	C-ELEC - 10V 47M-M	
C9D39	181P352030	C-ELEC - 16V 47M-M	
C9D40	181P353060	C-ELEC - 25V 330M-M	
C9D41	181P355060	C-ELEC - 50V 22M-M	
C9D42	181P355050	C-ELEC - 50V 10M-M	
C9D43	181P351030	C-ELEC - 10V 47M-M	
C9D44	181P352050	C-ELEC - 16V 220M-M	
C9D45	142P023080	C-CER - BF50V 0.01M-Z	

Ref #	Part #	Part Name & Description	[#]
C9D46	181P355050	C-ELEC - 50V 10M-M	
C9F01	189P185090	C-CER - AC250V E2200P-M	
C9F02	189P185090	C-CER - AC250V E2200P-M	
C9F03	189P185090	C-CER - AC250V E2200P-M	
C9F04	189P185090	C-CER - AC250V E2200P-M	
C9F05	172P533030	C-M-POLY - 400V 0.47M-J	
C9F06	189P106030	C-CER - CH50V 470P-J	
C9F07	155P233010	C-CER - CH50V 68P-J	
C9F08	142P023080	C-CER - BF50V 0.01M-Z	
C9F09	172P262070	C-M-POLY - 50V 0.15M-J	
C9F10	172P262010	C-M-POLY - 50V 0.047M-J	
C9F11	189P106030	C-CER - CH50V 470P-J	
C9F12	172P263030	C-M-POLY - 50V 0.47M-J	
C9F13	142P024060	C-CER - BF50V 0.1M-Z	
C9F14	172P263070	C-M-POLY - 50V 1.0M-J	
C9F15	142P024060	C-CER - BF50V 0.1M-Z	
C9F16	181P184040	C-ELEC - 35V 330M-M 105C	
C9F17	142P023080	C-CER - BF50V 0.01M-Z	
C9F18	142P023080	C-CER - BF50V 0.01M-Z	
C9F19	181P186010	C-ELEC - 50V 220M-M 105C	
C9F20	172P263070	C-M-POLY - 50V 1.0M-J	
C9F22	172P543030	C-M-POLY - 630V 0.47M-J	
C9F23	185D127050	C-ELEC - H450V 220M-M 105C	
C9F24	154P400030	C-CER - B1KV 470P-K	

SWITCHES

Ref #	Part #	Part Name & Description	[#]
S7L20	432P109010	SW-KEY BOARD - KSHS611BT	
S7L21	432P109010	SW-KEY BOARD - KSHS611BT	
S7L22	432P109010	SW-KEY BOARD - KSHS611BT	
S7L23	432P109010	SW-KEY BOARD - KSHS611BT	
S7L24	432P109010	SW-KEY BOARD - KSHS611BT	
S7L25	432P109010	SW-KEY BOARD - KSHS611BT	
S7L26	432P109010	SW-KEY BOARD - KSHS611BT	
S7L27	432P109010	SW-KEY BOARD - KSHS611BT	
S7L28	432P109010	SW-KEY BOARD - KSHS611BT	
S7L29	432P109010	SW-KEY BOARD - KSHS611BT	
	436P021010	SW-MICRO	

MISCELLANEOUS

Ref #	Part #	Part Name & Description	[#]
	096Z465030	TAPE-LENS	
	242D535010	CABLE-EXTENSION - 1394	
	242D536010	CABLE-MEMORY - USB/5P-JS	
	246C463010	CABLE - D-SUB	
	246C469010	CABLE - LVDS	
	246C351030	CORD-AC - POWER	
	292B340010	BRACKET-AV-JACK	
	292B341010	COVER-MEMORY-CARD-READER	
	299C037010	FAN:ILLUMINATION	
	299C038010	FAN:COMBINER	
	299C039010	FAN:LAMP	
	299C050010	SENSOR:LAMP TEMPERATURE	
	299P103050	FAN-FORMATTER	
	299P103060	FAN-EXHAUST	
	305P702020	2RF-SW	
	411D062010	CORE-FERRITE - R15 L18	
	411D063010	CORE-FERRITE - ZCAT2132-1130	
	411D063020	CORE-FERRITE - CAT3035	
	480P058010	SPEAKER - 3"	
	480P069010	SPEAKER - 7"	

MODEL: WL-82913

[#] Model Legend: [a] WL-82913

Ref #	Part #	Part Name & Description	[#]
	589C063020	CASTOR:DUAL WHEEL	
	593C960010	BRACKET-DOOR	
	598D552010	MIRROR-SUPPORT - TOP	
	598D552020	MIRROR-SUPPORT - BTM	
	620D133010	FILTER-DUST	
	641A516010	TRAY-DUST	
	642C416010	BOARD-BACK	
	689D006010	DOWEL PIN	
	702A432010	PANEL-TERMINAL - AC	
	702A433010	PANEL-TERMINAL - DM	
	752B127010	COVER-LAMP	
	760A011020	INLAY TERMINAL - AC	
	760A012010	INLAY TERMINAL - DM	
	761C273010	DOOR-CATCH	
	762A202010	COVER-BACK - MIRROR	
	762C100010	PANEL-FRONT	
	767D074010	MIRROR - 82"	
	915P016010	LAMP:CARTRIDGE	
	939P953010	ASSY-OPTICAL-ENGINE	
	939P954010	UNIT-POWER-LAMP - PHG201G8CH	
	955C241001	ASSY-MEMORY CARD READER	
RV9A00	265P100020	VAR - ERZV10D271CS	
TH9F01	265P130020	TERMISTOR - M8R207CS	
TH9F02	265P130020	TERMISTOR - M8R207CS	
F9A00	283D131040	FUSE - S10A 125A	
F9A01	**283P144060**	**FUSE - 125V 7A (20N 7000)**	
F9A02	283D147090	FUSE - T6.3A	
F9D00	283P144090	FUSE - 125V 10A (20N 10K)	
F9D01	283P144070	FUSE - 125V 3A (20N 3000)	
F9D02	283P144080	FUSE - 125V 5A (20N 5000)	
F9D03	283P144090	FUSE - 125V 10A (20N 10K)	
F9D04	283P144070	FUSE - 125V 3A (20N 3000)	
F9D05	283P144070	FUSE - 125V 3A (20N 3000)	
F9F01	283P144070	FUSE - 125V 3A (20N 3000)	
SF5200	296P171010	SAW-FILTER - X6892D	
SF5201	296P170010	SAW-FILTER - X6941D	
J2C01	452C388010	CONNECTOR-DSUB	
J2D01	452C371020	CONNECTOR-DVI	
J5110	451P246010	JACK-1394 - MINI	
J5120	451P246010	JACK-1394 - MINI	
K9A50	**287P100010**	**RELAY-PWR - DG9D1-0(M)-II-0.25W**	
K9A51	287P100010	RELAY-PWR - DG9D1-0(M)-II-0.25W	
PC9A20	**268P058020**	**PHOTO-COUPLER - ON3131-R/ON3161-R**	
PC9A21	268P058020	PHOTO-COUPLER - ON3131-R/ON3161-R	
PC9A50	**268P058020**	**PHOTO-COUPLER - ON3131-R/ON3161-R**	
PJ2J00	440C407050	PIN-JACK-BOARD-6P-2S	
PJ2J10	440C410050	PIN-JACK-BOARD-5P	
PJ2J11	440C384010	PIN-JACK-BOARD-3P	
PJ2J20	440C410050	PIN-JACK-BOARD-5P	
PJ2J30	440C410050	PIN-JACK-BOARD-5P	
PJ2J31	440C409050	PIN-JACK-BOARD-2P	
PJ2J41	440C421050	PIN-JACK-BOARD-2P	
PJ2J50	440C421050	PIN-JACK-BOARD-2P	
PJ2J60	440C421050	PIN-JACK-BOARD-2P	
PJ2J70	440C412050	PIN-JACK-BOARD-3P-1S	
PJ7C00	451C129010	JACK-MINI - AV NET/IR BLAST	
PJ7C01	451C129010	JACK-MINI - AV NET/IR BLAST	
PJ7C02	451C129010	JACK-MINI - AV NET/IR BLAST	
PJ7C03	451C129010	JACK-MINI - AV NET/IR BLAST	
TU1A01	**295P516010**	**TUNER-TV - 115-V-F045AP**	

Ref #	Part #	Part Name & Description	[#]
TU1B01	295P516010	TUNER-TV - 115-V-F045AP	
TU5200	**295P490040**	**TUNER-TV - ENA46914P4A**	
X2E47	285P426040	QTZ-CRYST - 20.000MHZ	
X2F10	299P267010	RESONATOR-CER - CSBLA503KECZF30-B0	
X2F21	285P426010	QTZ-CRYST - 3.579545MHZ	
X2G10	299P267010	RESONATOR-CER - CSBLA503KECZF30-B0	
X2G21	285P426010	QTZ-CRYST - 3.579545MHZ	
X3A01	285P413010	QTZ-CRYST - 18.432MHZ	
X52A0	285P441010	QTZ-CRYST - 26.800MHZ	
X7000	285P434010	QTZ-CRYST - 8.000MHZ	
X7A15	285P434020	QTZ-CRYST - 16.000MHZ	
Z7K01	939P617010	UNIT-PREAMP - GP1U283Q	

PRINTED CIRCUIT BOARDS

Ref #	Part #	Part Name & Description	[#]
	930B905008	ASSY-PWB-SIGNAL	
	930B906001	ASSY-PWB-POWER	
	930B908001	ASSY-PWB-FORMATTER	
	930B913001	ASSY-PWB-SUB POWER	
	930D059002	ASSY-PWB-MLINK	
	934C060008	ASSY-PWB-TERMINAL	
	934C061001	ASSY-PWB-E2P	
	934C066001	ASSY-PWB-DEMOD	
	934C067004	ASSY-PWB-DM	
	934C069001	ASSY-PWB-INTER-CONNECT	
	934C105001	ASSY-PWB-DTV-TUNER	
	935D733008	ASSY-PWB-PREAMP	
	935D748001	ASSY-PWB-CONTROL	
	935D749001	ASSY-PWB-FRONT	
	299P271010	MEMORY-CARD-READER-PWB	

COSMETIC PARTS

Ref #	Part #	Part Name & Description	[#]
	703B041010	DOOR - A/V	
	703D124010	CAP: SCREW BLACK GLOSSY	
	761A220010	GRILLE - SPEAKER	
	712C703010	GRILLE - SPEAKER - TRIM	

ACCESSORIES

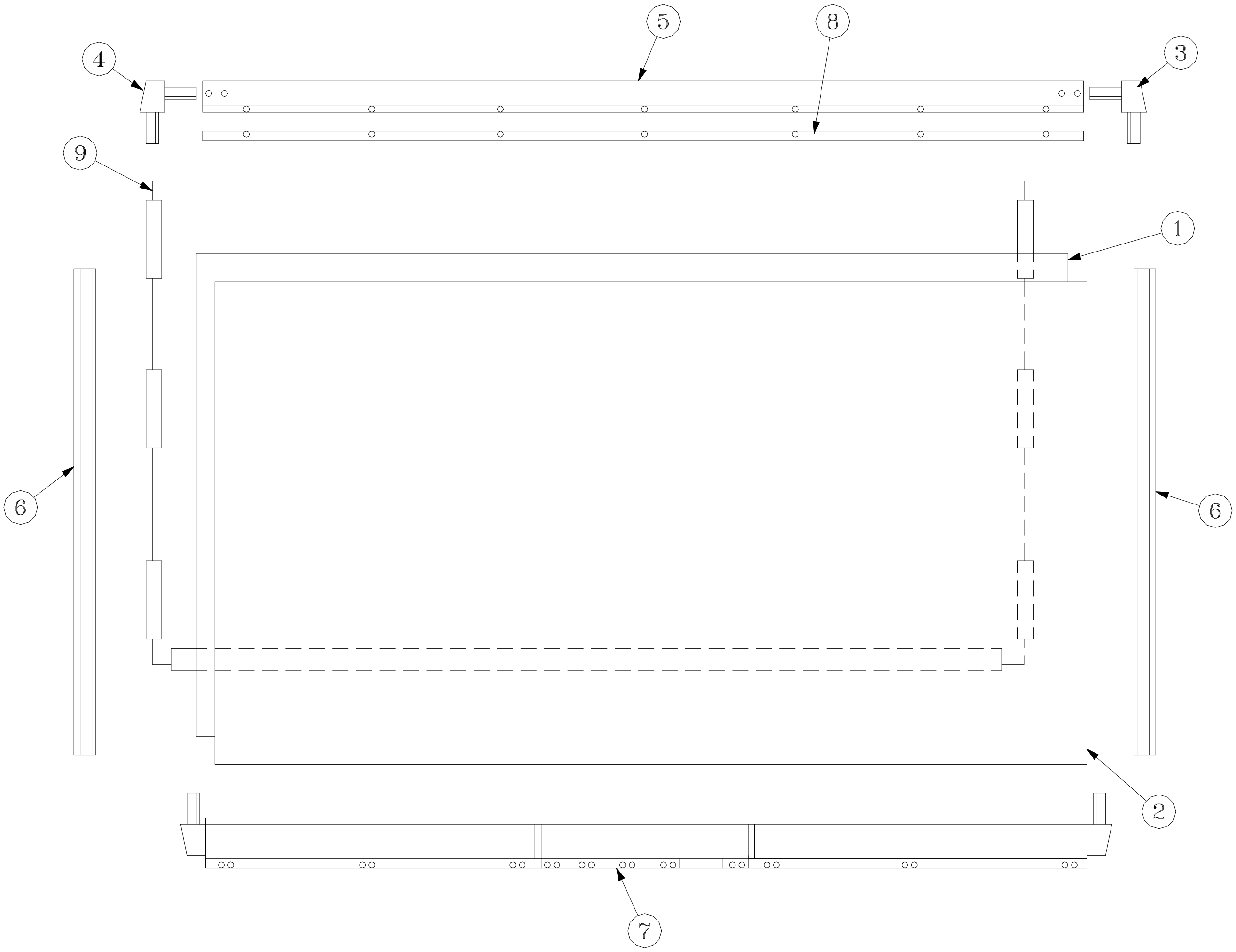
Ref #	Part #	Part Name & Description	[#]
	242D525010	CABLE-AUDIO CABLE	
	242D527010	CABLE-IR	
	299P254020	IR-EMITTER, 4-HEAD - T-IR-02 W/FERRITE CO	
	290P117010	REMOTE CONTROL - V22+/V23	
	I/B WL82913	GUIDE-OWNERS (BOOKS 1 & 2)	
	I/QR WL82913	GUIDE-QUICK REF	

MODEL: WL-82913

[#] Model Legend: [a] WL-82913

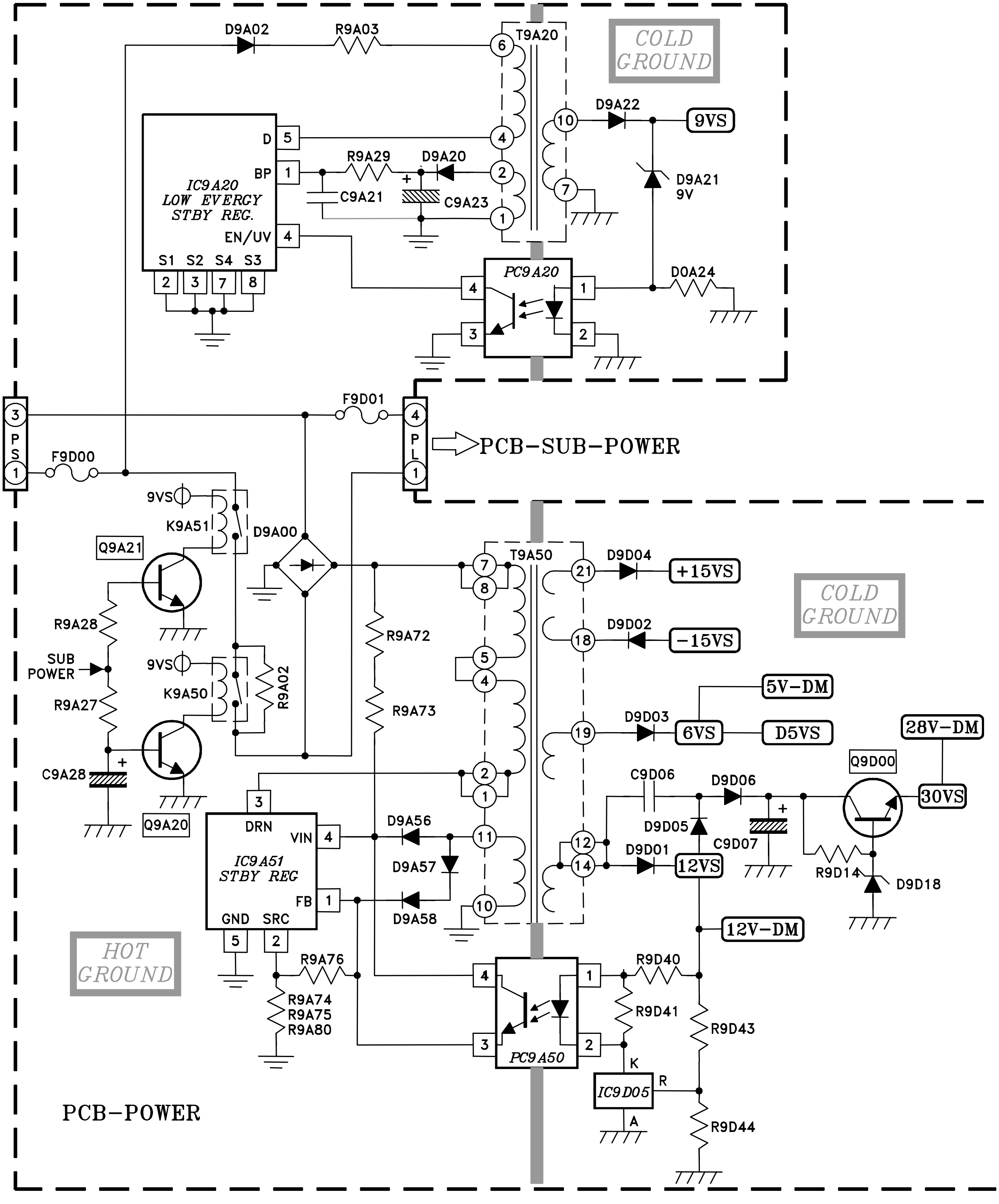
SCREEN ASSEMBLY PARTS

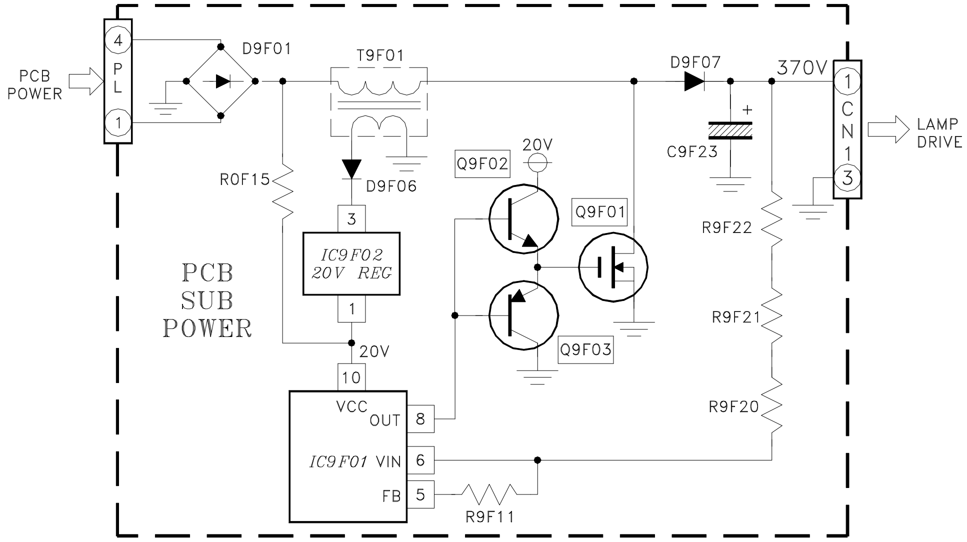
Ref #	Part #	Part Name & Description	[#]
(1)	491P168010	SCREEN-DIFFUSER - 82"	
(2)	491P169010	LENS-FRESNEL - 82"	
(3)	702A438010	CAP-CORNER - LEFT	
(4)	702A438020	CAP-CORNER - RIGHT	
(5)	711B032010	FRAME-TOP	
(6)	711B034010	FRAME-SIDE	
(7)	711C049010	FRAME-BOTTOM	
(8)	712C702010	FRAME-TRIM-TOP	
(9)	KIT-WL82913 DS	DIAMOND SHIELD KIT - 82"	



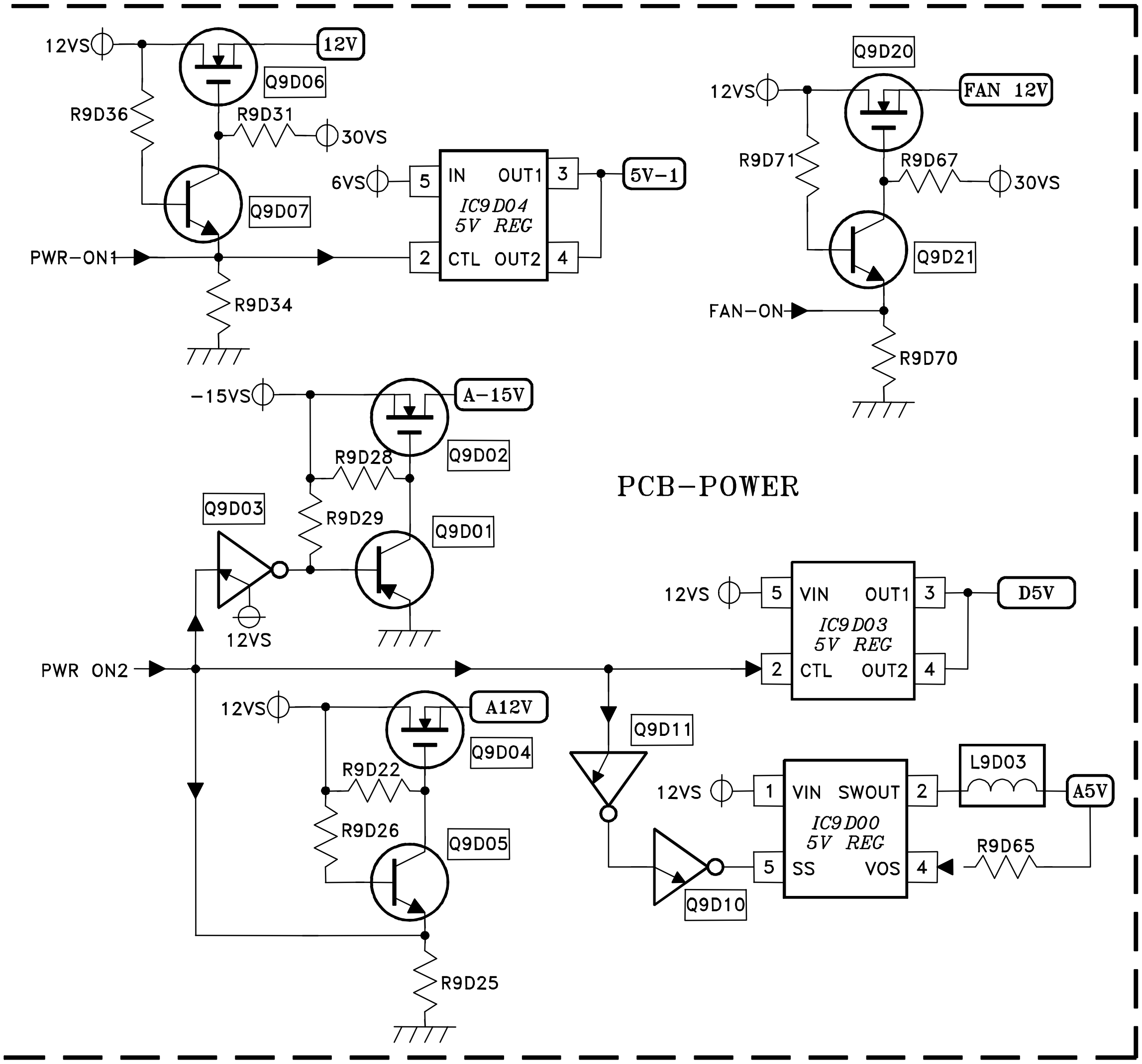
(Rear View)

Standby Power Supply Circuitry


COLD GROUND
D9A02
R9A03
T9A20
IC9A20 LOW EVERGY STBY REG.
D
BP
EN/UV
S1 S2 S4 S3
R9A29
D9A20
C9A21
C9A23
D9A22
9VS
D9A21 9V
PC9A20
D0A24
F9D01
PS
F9D00
PL
PCB-SUB-POWER
9VS
K9A51
D9A00
Q9A21
R9A28
SUB POWER
R9A27
K9A50
R9A02
C9A28
Q9A20
R9A72
R9A73
T9A50
D9D04
+15VS
D9D02
-15VS
COLD GROUND
5V-DM
D9D03
6VS
D5VS
28V-DM
Q9D00
C9D06
D9D06
30VS
D9D05
C9D07
D9D01
12VS
R9D14
D9D18
12V-DM
IC9A51 STBY REG
DRN
VIN
FB
GND
SRC
D9A56
D9A57
D9A58
HOT GROUND
R9A76
R9A74
R9A75
R9A80
PC9A50
R9D40
R9D41
R9D43
K
R
A
IC9D05
R9D44
PCB-POWER

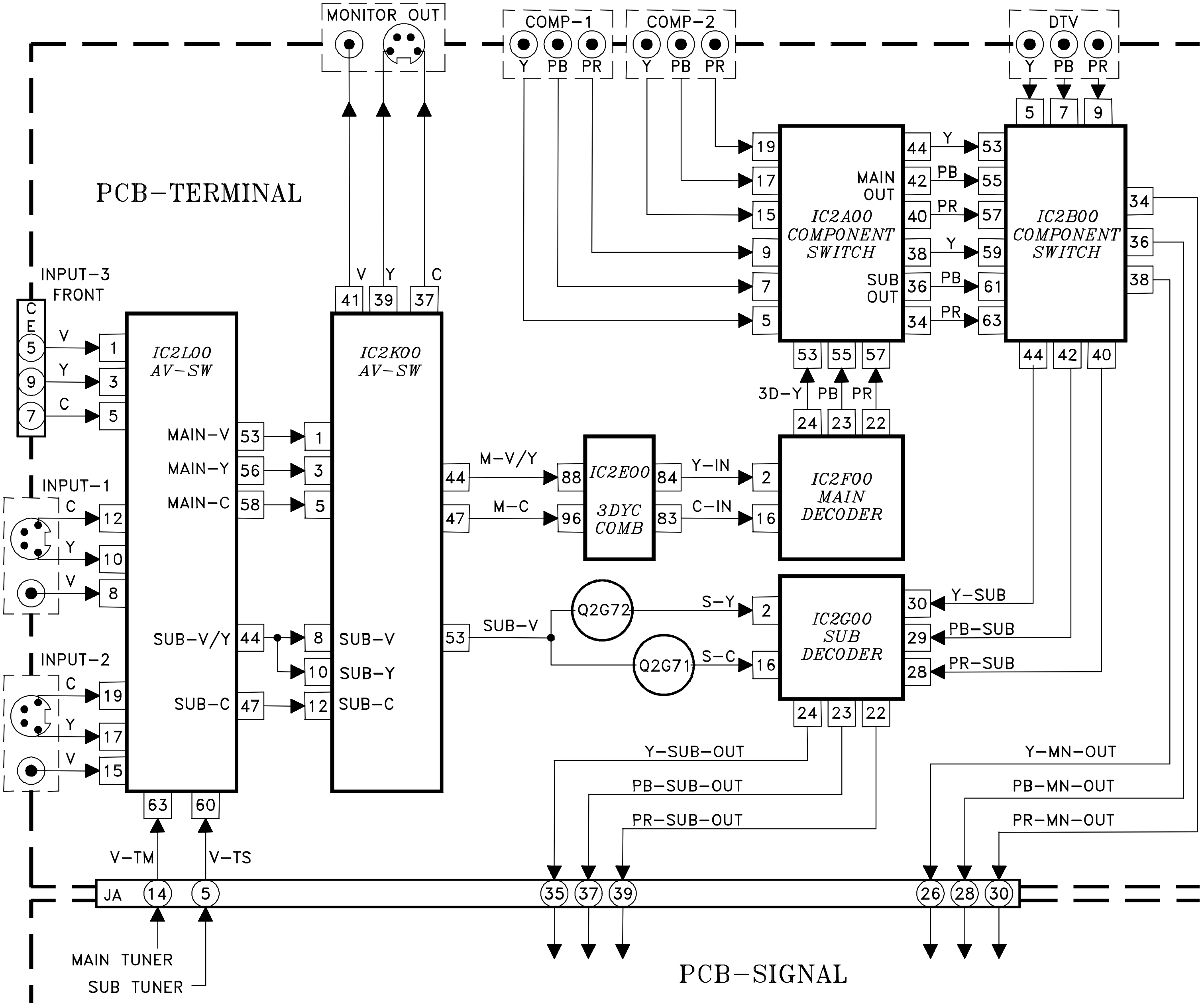

PCB POWER
4
P
L
1
D9F01
T9F01
D9F07
370V
1
C
N
1
3
LAMP DRIVE
C9F23
R0F15
D9F06
3
IC9F02
20V REG
1
20V
10
PCB SUB POWER
Q9F02
20V
Q9F01
Q9F03
R9F22
R9F21
R9F20
VCC
OUT
8
IC9F01
VIN
6
FB
5
R9F11

Lamp Power Supply

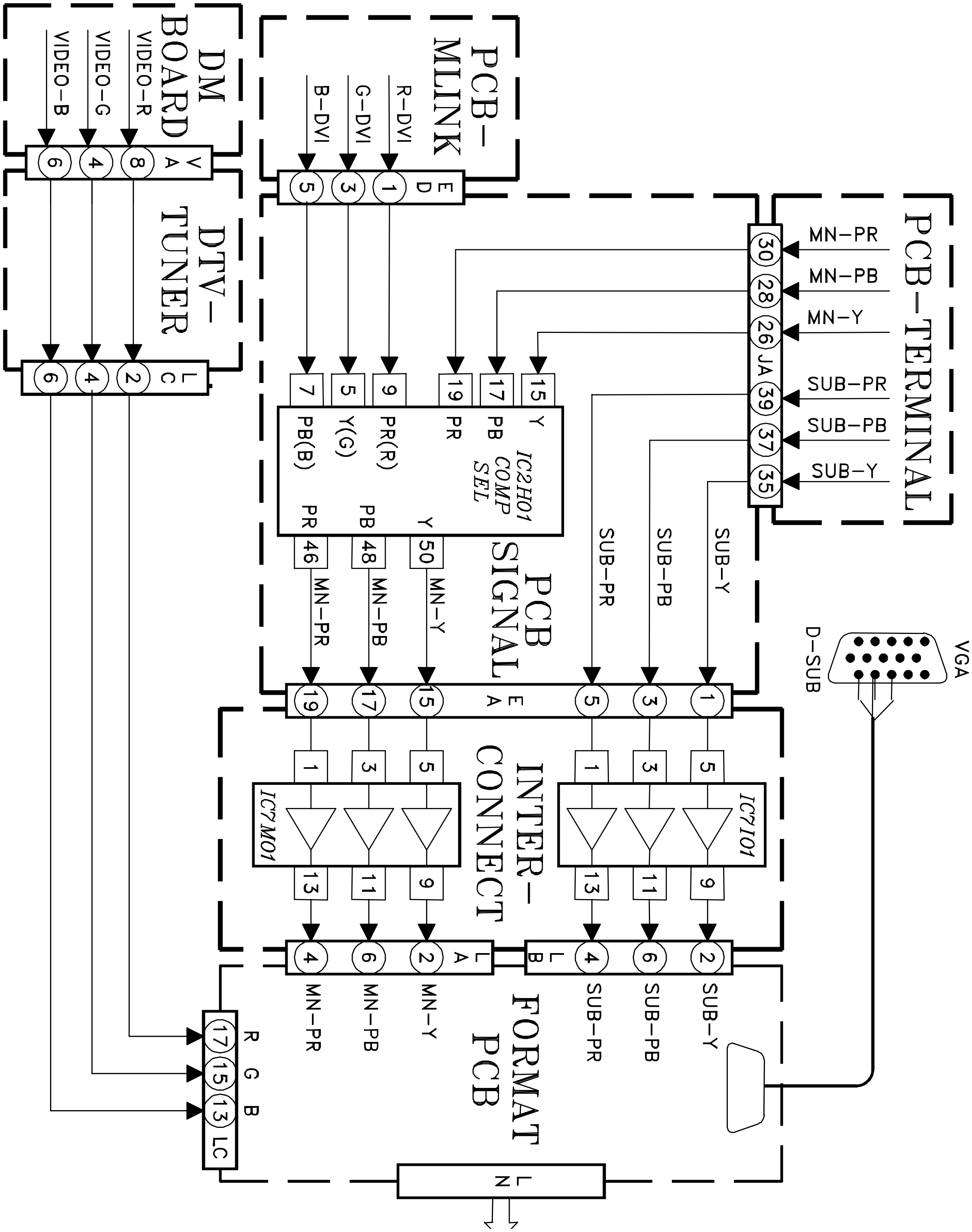

12VS
12V
Q9D06
R9D36
R9D31
30VS
6VS
5
IN
OUT1
3
5V-1
IC9D04
5V REG
Q9D07
PWR-ON1
2
CTL
OUT2
4
R9D34
Q9D20
12VS
FAN 12V
R9D71
R9D67
30VS
Q9D21
FAN-ON
R9D70
-15VS
A-15V
R9D28
Q9D02
PCB-POWER
Q9D03
R9D29
Q9D01
12VS
12VS
5
VIN
OUT1
3
D5V
IC9D03
5V REG
PWR ON2
2
CTL
OUT2
4
12VS
A12V
Q9D04
Q9D11
R9D22
L9D03
12VS
1
VIN
SWOUT
2
A5V
R9D26
Q9D05
IC9D00
5V REG
R9D65
5
SS
VOS
4
Q9D10
R9D25

Switched Power Supply Circuitry

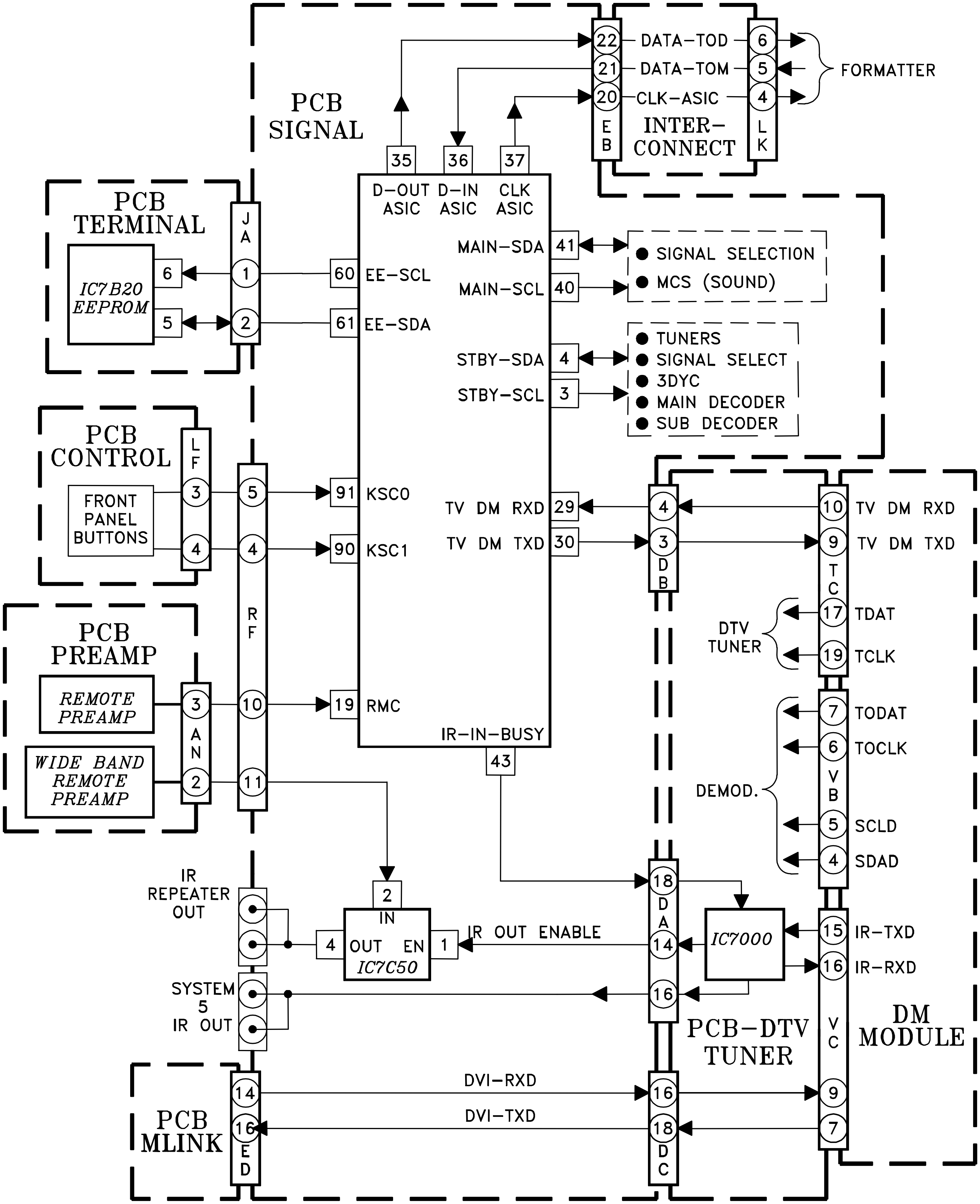
PCB-TERMINAL Video/Color Signal Path


PCB−TERMINAL
PCB−SIGNAL
MONITOR OUT
COMP−1
COMP−2
DTV
Y PB PR
INPUT−3 FRONT
INPUT−1
INPUT−2
C E
V Y C
IC2L00 AV−SW
MAIN−V
MAIN−Y
MAIN−C
SUB−V/Y
SUB−C
IC2K00 AV−SW
SUB−V
SUB−Y
SUB−C
IC2A00 COMPONENT SWITCH
MAIN OUT
SUB OUT
IC2B00 COMPONENT SWITCH
IC2E00 3DYC COMB
IC2F00 MAIN DECODER
IC2G00 SUB DECODER
Q2G72
Q2G71
M−V/Y
M−C
Y−IN
C−IN
SUB−V
S−Y
S−C
3D−Y
Y−SUB
PB−SUB
PR−SUB
Y−SUB−OUT
PB−SUB−OUT
PR−SUB−OUT
Y−MN−OUT
PB−MN−OUT
PR−MN−OUT
V−TM
V−TS
JA
MAIN TUNER
SUB TUNER

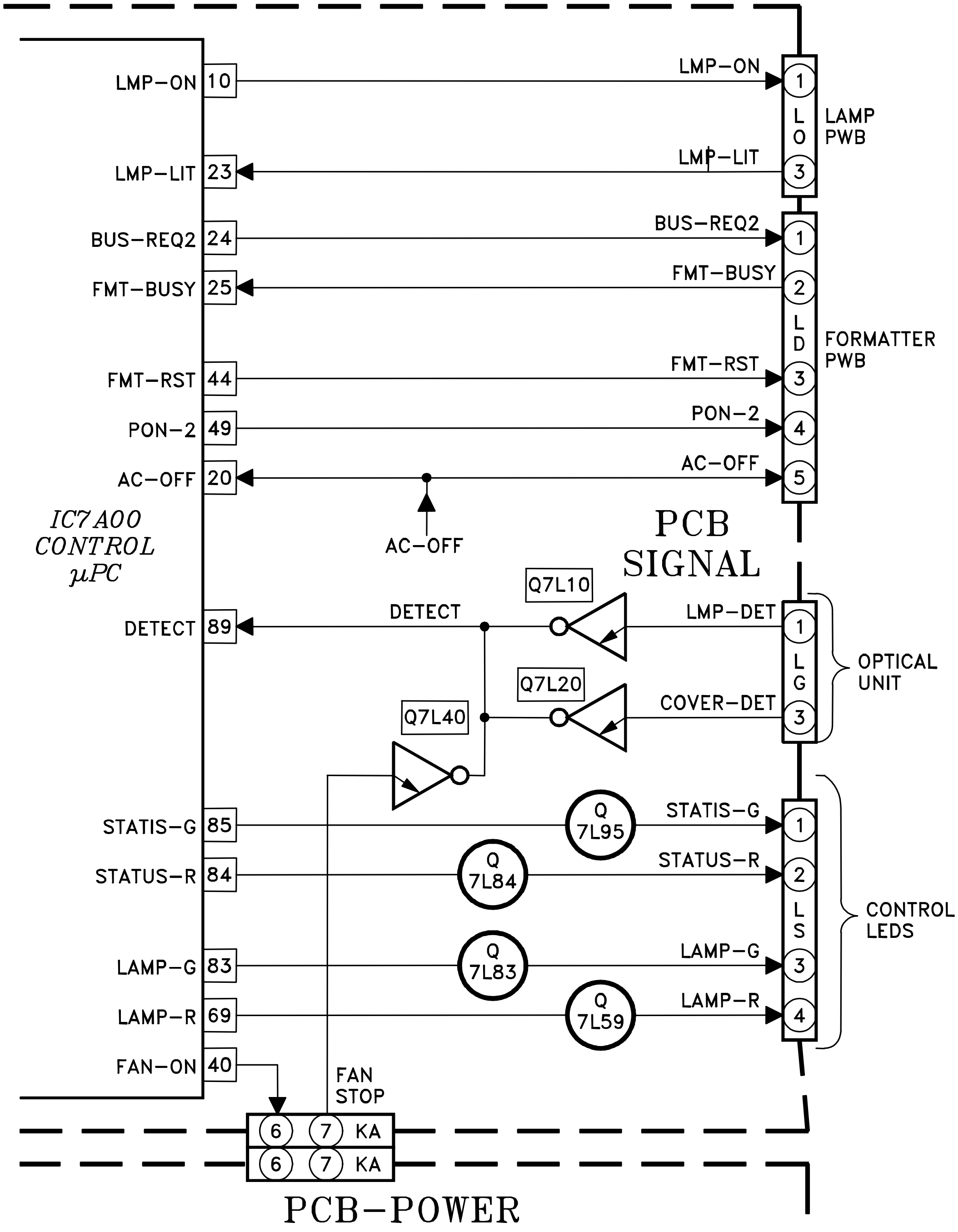
PCB-SIGNAL Video/Color Signal Path


DM BOARD
VIDEO-R
VIDEO-G
VIDEO-B
VA
8
4
6
DTV-TUNER
LC
2
4
6
PCB-MLINK
R-DVI
G-DVI
B-DVI
ED
1
3
5
PCB-TERMINAL
MN-PR
MN-PB
MN-Y
SUB-PR
SUB-PB
SUB-Y
JA
30
28
26
39
37
35
PCB SIGNAL
IC2H01 COMP SEL
15 Y
17 PB
19 PR
9 PR(R)
5 Y(G)
7 PB(B)
Y 50
PB 48
PR 46
MN-Y
MN-PB
MN-PR
SUB-PR
SUB-PB
SUB-Y
EA
19
17
15
5
3
1
INTER-CONNECT
IC7M01
IC7I01
1
3
5
13
11
9
LA
4
6
2
LB
4
6
2
FORMAT PCB
MN-PR
MN-PB
MN-Y
SUB-PR
SUB-PB
SUB-Y
R G B LC
17
15
13
LN
VGA
D-SUB

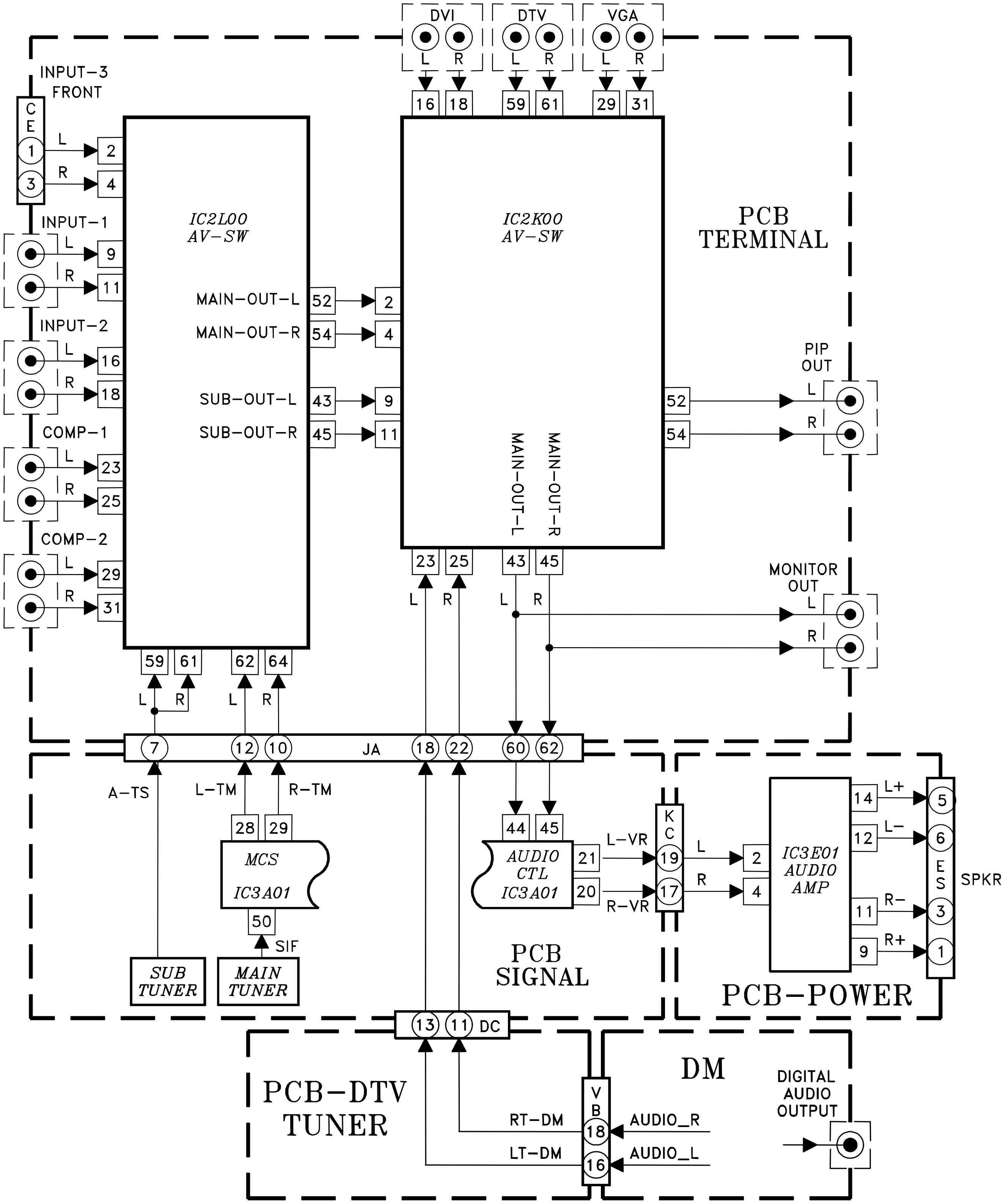
Control Circuitry


PCB SIGNAL
DATA-TOD
DATA-TOM
CLK-ASIC
FORMATTER
INTER-CONNECT
EB
LK
22
21
20
6
5
4
35
36
37
D-OUT ASIC
D-IN ASIC
CLK ASIC
PCB TERMINAL
IC7B20 EEPROM
JA
60 EE-SCL
61 EE-SDA
MAIN-SDA 41
MAIN-SCL 40
● SIGNAL SELECTION
● MCS (SOUND)
STBY-SDA 4
STBY-SCL 3
● TUNERS
● SIGNAL SELECT
● 3DYC
● MAIN DECODER
● SUB DECODER
PCB CONTROL
FRONT PANEL BUTTONS
LF
RF
91 KSC0
90 KSC1
TV DM RXD 29
TV DM TXD 30
DB
TC
TV DM RXD
TV DM TXD
DTV TUNER
17 TDAT
19 TCLK
PCB PREAMP
REMOTE PREAMP
WIDE BAND REMOTE PREAMP
AN
19 RMC
IR-IN-BUSY
43
7 TODAT
6 TOCLK
DEMOD.
VB
5 SCLD
4 SDAD
IR REPEATER OUT
IN
OUT EN
IC7C50
IR OUT ENABLE
DA
IC7000
15 IR-TXD
16 IR-RXD
SYSTEM 5 IR OUT
PCB-DTV TUNER
VC
DM MODULE
PCB MLINK
ED
DVI-RXD
DVI-TXD
DC

Additional LCOS Command & Status Circuitry


IC7A00
CONTROL
μPC
LMP-ON 10
LMP-LIT 23
BUS-REQ2 24
FMT-BUSY 25
FMT-RST 44
PON-2 49
AC-OFF 20
DETECT 89
STATIS-G 85
STATUS-R 84
LAMP-G 83
LAMP-R 69
FAN-ON 40
LMP-ON
LMP-LIT
BUS-REQ2
FMT-BUSY
FMT-RST
PON-2
AC-OFF
AC-OFF
DETECT
Q7L10
Q7L20
Q7L40
LMP-DET
COVER-DET
STATIS-G
STATUS-R
LAMP-G
LAMP-R
Q 7L95
Q 7L84
Q 7L83
Q 7L59
LO 1 3
LAMP PWB
LD 1 2 3 4 5
FORMATTER PWB
PCB SIGNAL
LG 1 3
OPTICAL UNIT
LS 1 2 3 4
CONTROL LEDS
FAN STOP
6 7 KA
6 7 KA
PCB-POWER

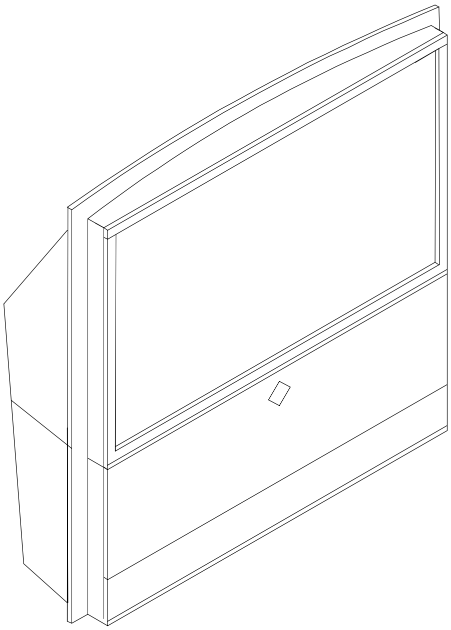
Audio Circuitry


DVI
L R
DTV
L R
VGA
L R
16 18 59 61 29 31
INPUT-3 FRONT
CE
1 L 2
3 R 4
INPUT-1
L 9
R 11
INPUT-2
L 16
R 18
COMP-1
L 23
R 25
COMP-2
L 29
R 31
IC2L00 AV-SW
MAIN-OUT-L 52
MAIN-OUT-R 54
SUB-OUT-L 43
SUB-OUT-R 45
2 4 9 11
IC2K00 AV-SW
MAIN-OUT-L
MAIN-OUT-R
PCB TERMINAL
PIP OUT
52 L
54 R
23 25 43 45
L R L R
MONITOR OUT
L
R
59 61 62 64
L R L R
JA
7 12 10 18 22 60 62
A-TS
L-TM
R-TM
28 29
MCS IC3A01
50
SIF
SUB TUNER
MAIN TUNER
44 45
AUDIO CTL IC3A01
21 L-VR
20 R-VR
KC
19 17
L R
2 4
IC3E01 AUDIO AMP
14 L+ 5
12 L- 6
11 R- 3
9 R+ 1
ES
SPKRS
PCB SIGNAL
PCB-POWER
DC
13 11
PCB-DTV TUNER
DM
VB
RT-DM 18 AUDIO_R
LT-DM 16 AUDIO_L
DIGITAL AUDIO OUTPUT

2003

MITSUBISHI ELECTRIC

Service Manual



LIQUID CRYSTAL ON SILICON PROJECTION TV
V23L CHASSIS

MODEL
WL-82913

CAUTION:
Before servicing this chassis, it is important that the service person read the "SAFETY PRECAUTIONS" and "PRODUCT SAFETY NOTICE" contained in this manual.

PART 2
SCHEMATIC DIAGRAMS

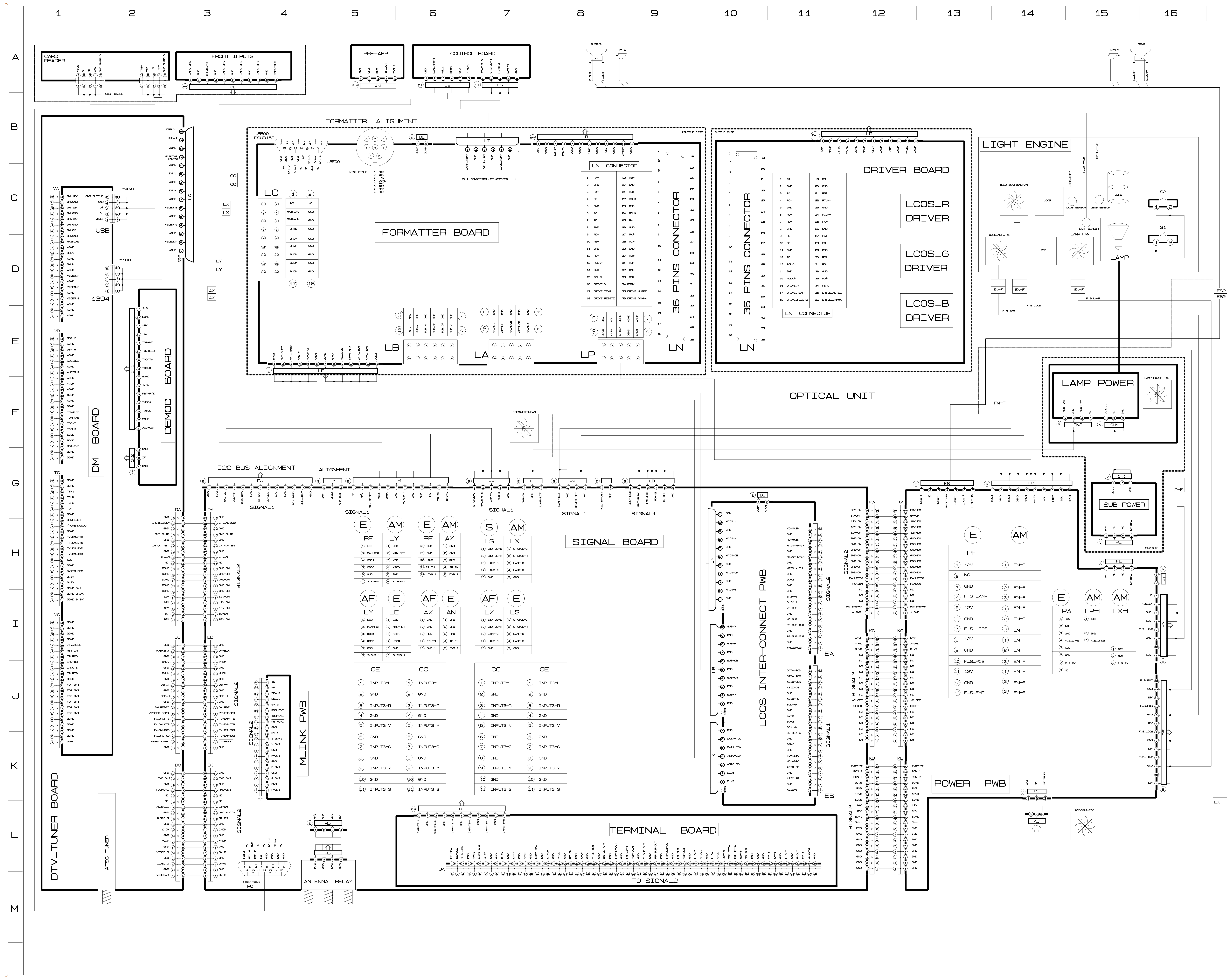
CONTENTS **Page**

PCB Interconnect S1
PCB-POWER / SUB-POWER S2
PCB-TERMINAL-1 .... S3
PCB-TERMINAL-2 .... S4
PCB-SIGNAL-1 (MICRO) S5
PCB-SIGNAL-2 (TUNER-AUDIO) S6
PCB-MLINK/ESP S7
PCBs CONTROL / FRONT / PREAMP / CONNECT .. S8
PCB-TUNER DTV S9
PCB-DEMODULATOR S10

Refer to PART 1 for:
- Specifications
- Safety Precautions
- Disassembly
- Electrical Adjustments
- Parts List
- Block Diagrams

MITSUBISHI DIGITAL ELECTRONICS AMERICA, INC.
9351 Jeronimo Road, Irvine, CA 92618-1904

Copyright © 2003 Mitsubishi Digital Electronics America, Inc.
All Rights Reserved


CARD READER
USB CABLE
FRONT INPUT3
PRE-AMP
CONTROL BOARD
FORMATTER ALIGNMENT
JB800 DSUB15P
JBF00
MINI DIN-8
LC
FORMATTER BOARD
LB
LA
LP
LN
LN CONNECTOR
36 PINS CONNECTOR
(SHIELD CASE)
DRIVER BOARD
LCOS_R DRIVER
LCOS_G DRIVER
LCOS_B DRIVER
LIGHT ENGINE
ILLUMINATION_FAN
COMBINER_FAN
LAMP-FAN
LAMP SENSOR
LENS SENSOR
LCOS SENSOR
LENS
LAMP
S1
S2
LAMP POWER
LAMP-POWER-FAN
OPTICAL UNIT
FORMATTER_FAN
SUB-POWER
USB
1394
DEMOD BOARD
DM BOARD
DTV_TUNER BOARD
ATSC TUNER
I2C BUS ALIGNMENT
ALIGNMENT
SIGNAL1
SIGNAL BOARD
SIGNAL2
MLINK PWB
LCOS INTER-CONNECT PWB
POWER PWB
EXHAUST_FAN
TERMINAL BOARD
TO SIGNAL2
ANTENNA
RELAY
PC
AC
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
A B C D E F G H I J K L M

* NOTES

1. DC voltages were measured from points indicated to the circuit ground with a high-Z voltmeter
2. Wave form were taken with standard color bar signal.
3. TP13.etc. show test points.
4. CAPACITOR

Value	Not indicated		PF. for numbers more than 1 uF. for numbers less than 1
Dielectric strength	Not indicated : 50V		
Tolerance	Not indicated = +/- 10%		No tolerance is indicated for electrolytic capacitor and +/- 20%
	G=+/-2% J=+/-5% K=+/-10% M=+/-20%	P=+100% -0% Z=+80% -20%	Q=+30% -10% T=+200% -0% C=+/-0.25PF D=+/-0.5PF F=+/-1PF D=+/-2PF
Type	I	Parts except for chips	Not indicated : Ceramic capacitor MF : Polyester capacitor PP : Polypropylene film capacitor ALM : Aluminus electrolytic capacitor TF : Twin film capacitor SC : Semiconductor Ceramic capacitor MP : Metalized paper MPP : Metalized plastic film capacitor MMF : Metalized polyester capacitor MF.PP : Polyester polypropylene film capacitor PS : Styrol capacitor TAN or TANT: Tantalum capacitor +‖ : Electrolytic capacitor NP : Non polarized electrolytic capacitor
	II	chips	Not indicatedCeramic capacitor chip +‖ : Electrolytic capacitor NP : Non polarized electrolytic capacitor chip
Characteristic (Only ceramic capacitor)	Not indicated : F or B (high dielrctric percentage) CH. SL. etc. : Temperature compensaing types		

5. RESITOR

Value	Not indicated = Ohm K = 1,000 Ohm M = 1,000,000 Ohm		
Wattage	Parts except for chips		Not indicated = 1/4W or 1/6W
	Chips		Not indicated = 1/10W
Toler ance	Not indicated = +/-5% D = +/-0.5% J = +/-5% F = +/-1% K = +/-10%		
Type	I	Parts except for chips	Not indicated : Carbon resistor S : Fixed composition resistor MB : Metal oxide film resistor(Type B) CE : Cemented resistor W : Wire wound resistor M : Metal film resistor MP : Metal plate cement resistor ML : Metal liner resistor
	II	chips	Not indicated : chip resistor

6. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement

SHADED COMPONENTS HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE PRODUCT SAFETY NOTICE IN THE SERVICE MANUAL. DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

SERVICE TECHNICIAN WARNING:

X-RADIATION PRECAUTION

THIS PRODUCT INCLUES CRITICAL ELECTRICAL AND MECHANICAL PARTS ESSENTIAL FOR X-RADIATION PRORECTION

TO AVOID POSSIBLE TO X-RADIATION TAKE RADIATION PROTECTIVE MEASURE FOR PERSONNEL DURONG SERVICING.

SEE SERVICE INSTRUCTION FOR SPECIFIED REPLACEMENT PARTS AND SERVICE ADJUSTMENTS.

CONTENTS

WL-82913

PG. 1....BLOCK DIAGRAM
PG. 2....POWER / SUB-POWER
PG. 3....TERMINAL 1
PG. 4....TERMINAL 2
PG. 5....SIGNAL 1 TV-MICRO
PG. 6....SIGNAL 2 AUIDO-TUNER
PG. 7....MLINK / E2P
PG. 8....PREAMP/CONTROL/
FRONT/INTER-CONNECT
PG. 9....DTV TUNER
PG. 10...DEMOD

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
PWB-POWER
PWB-SUB-POWER
(TO FMT PWB)
LP
(TO ENGINE FAN)
PF
(TO LAMP/EX FAN)
PA
PT
DM POWER SUPPLY
(TO SIGNAL2 PWB)
TO SIGNAL2
POWER SUPPLY
(TO SIGNAL2 PWB)
KA
KC
KD
IC9000
SI-8050S
L9003
D1S12C4-V 150UH
IC9003
SI-3050C
IC9004
SI-3050C
IC3E01
LA4663
AUDIO AMPLIFIER
T9A50
ETS7983-39
IC9A51
STR-F6628
T9A20
ETS19AB1M3AG
IC9A20
TNY264P
IC9D05
NJM431L-T3
IC9F01
FA5502P
IC9F02
NJM78L20A
T9F01
DC-08068-5
Q9F01
FS2ZSM-10
COLD
HOT
ES
(TO SPEAKERS)
PS
(TO AC POWER CORD)
CN1
(TO LAMP DRIVER)
EY962B
EY962A

CONTENTS

PG. 1....BLOCK DIAGRAM
PG. 2....POWER / SUB-POWER
PG. 3....TERMINAL 1
PG. 4....TERMINAL 2
PG. 5....SIGNAL 1 TV-MICRO
PG. 6....SIGNAL 2 AUIDO-TUNER
PG. 7....MLINK / E2P
PG. 8....PREAMP/CONTROL/
FRONT/INTER-CONNECT
PG. 9....DTV TUNER
PG. 10...DEMOD

WL-82913

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
TO FRONT PWB
INPUT-1
INPUT-2
PJ2J00
R
L
V
IC2L00
CXA2069Q
M-TUNER
S-TUNER
MAIN-OUT-1
3D-IN
INPUT-3
INPUT-1
INPUT-2
SUB-OUT-1
COMP-1
COMP-2
IC2K00
CXA2069Q
DTV
AUDIO-2-OUT
MAIN-IN
SUB-IN
MAIN-OUT-2
MON-OUT
DVI
DM
VGA
AUDIO-OUT-2
PJ2J60
AUDIO-OUT-2 MUTE
PJ2J10
R L Pr Pb Y
PJ2J20
PJ2J30
DVI-L/R
PJ2J50
DTV-H/V
PJ2J31
VGA
PJ2J41
IC2B00
MM1519XQ
OUTPUT-1 (SYNC)
OUTPUT-2 (SUB-OUT)
OUTPUT-3 (MN-OUT)
INPUT-3 (MAIN-IN)
INPUT-4 (SUB-IN)
INPUT-1 (DTV-IN)
DTV SYNC CLAMP
IC2A95
MAX4550CAI
SYNC-SW
IC2A00
MM1519XQ
OUTPUT-2 (MN-OUT)
OUTPUT-3 (SUB-OUT)
INPUT-3 (3DYC)
INPUT-1 (COMP-1)
INPUT-2 (COMP-2)
IC7B20
M24C64WMST
JA
TO SIGNAL2
①
②
③
④
⑤
⑥
①② 1Vp-p(H)
③④ 2.1Vp-p(H)
⑤ 0.7Vp-p(H)
⑥ 0.7Vp-p(H)

CONTENTS

WL-82913

PG. 1....BLOCK DIAGRAM
PG. 2....POWER / SUB-POWER
PG. 3....TERMINAL 1
PG. 4....TERMINAL 2
PG. 5....SIGNAL 1 TV-MICRO
PG. 6....SIGNAL 2 AUIDO-TUNER
PG. 7....MLINK / E2P
PG. 8....PREAMP/CONTROL/
FRONT/INTER-CONNECT
PG. 9....DTV TUNER
PG. 10...DEMOD

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
MONITOR OUTPUT
V
L
R
MONITOR OUT MUTE
MAIN
IC2F00
TA1340AF
SUB
IC2G00
TA1340AF
IC2F10
BA05FP
C
Y
CV
IC2E20
IC2E00
UPD64083
3DY/C

CONTENTS

WL-82913

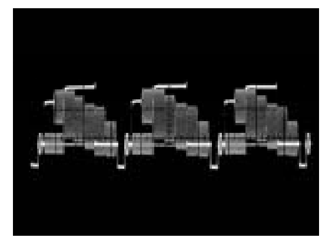
PG. 1....BLOCK DIAGRAM
PG. 2....POWER / SUB-POWER
PG. 3....TERMINAL 1
PG. 4....TERMINAL 2
PG. 5....SIGNAL 1 TV-MICRO
PG. 6....SIGNAL 2 AUIDO-TUNER
PG. 7....MLINK / E2P
PG. 8....PREAMP/CONTROL/
FRONT/INTER-CONNECT
PG. 9....DTV TUNER
PG. 10...DEMOD

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
ALIGNMENT
TO LAMP-PWB
TO FORMATTER-PWB
TO OPTICAL UNIT
CONTROL/PREAMP
CONTROL
LM
LD
LI
LG
RF
LS
IC7A00
M306V3FGFP
IC7C50
SN74AHCT1G126DBV
IC7C30
SN74HC132
IC7B00
IC7B01
SDA-MN
SCL-MN
IC7C85
IC7C80
Q7L40
DTC143ZKAT146
Q7L30
DTC143ZKAT146
Q7L20
DTC143ZKAT146
Q7L10
DTC143ZKAT146
Q7L50
DTC143ZKAT146
PJ7C00
PJ7C01
PJ7C02
PJ7C03
IR-REPEATER
SYSTEM-5-IR
TO SIGNAL2
TO SIGNAL2
TO TUNER
TO SIGNAL2
TO INTER-CONNECT PWB
TO SIGNAL2
TO SIGNAL2
TO TUNER
ALIGNMENT

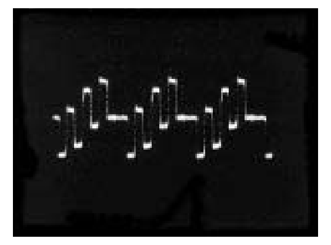
CONTENTS
WL-82913

PG. 1. . . . BLOCK DIAGRAM
PG. 2. . . . POWER / SUB-POWER
PG. 3. . . . TERMINAL 1
PG. 4. . . . TERMINAL 2
PG. 5. . . . SIGNAL 1 TV-MICRO
PG. 6. . . . SIGNAL 2 AUIDO-TUNER
PG. 7. . . . MLINK / E2P
PG. 8. . . . PREAMP/CONTROL/
FRONT/INTER-CONNECT
PG. 9. . . . DTV TUNER
PG. 10. . . DEMOD

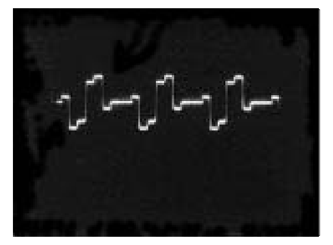
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
POWER PWB
KD
POWER PWB
KA
TO TV MICRO
TO TV MICRO
TO TV MICRO
DTV-TUNER
DC
DTV-TUNER
DB
POWER PWB
KC
SD-MAIN
SD-SUB
IC9C21
BA17809FP
IC9C22
BA033FP
IC9C24
BA033FP
IC9C23
BA05FP
TU1A01
115-V-F045AP
TU1B01
115-V-F045AP
RFSW01
YAA41-0126G
ANT B
ANT A
TUNER1
TUNER2
RF SWITCH
SPLIT_OUT
LOW
HIGH
0V
5V
IC3A01
MSP3445G-QI-B8-V3
IC2H01
MM1519XQ
Output1
Output2
Output3
Inp. Vid. 1
Inp. Vid. 2
Inp. Vid. 3
Inp. Tun.
IC9C25
BA05FP
JA
TERMINAL
ED
MLINK
EA
INTER-CONNECT
DA
DTV-TUNER



① 2. 1Vp-p(H)



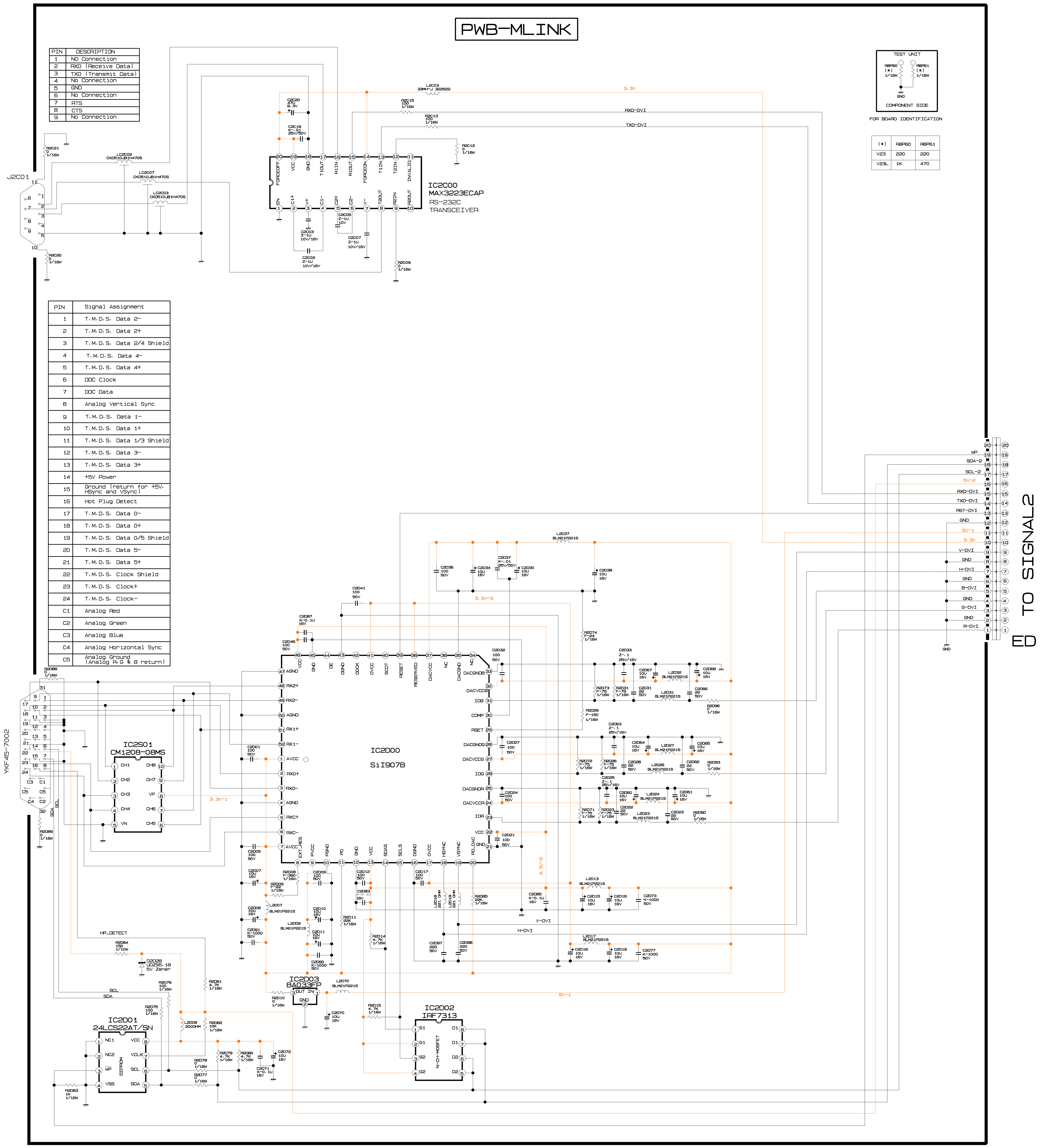
② 1Vp-p(H)



③ 1Vp-p(H)

CONTENTS
PG. 1. . . . BLOCK DIAGRAM
PG. 2. . . . POWER / SUB-POWER
PG. 3. . . . TERMINAL 1
PG. 4. . . . TERMINAL 2
PG. 5. . . . SIGNAL 1 TV-MICRO
PG. 6. . . . SIGNAL 2 AUIDO-TUNER
PG. 7. . . . MLINK / E2P
PG. 8. . . . PREAMP/CONTROL/
FRONT/INTER-CONNECT
PG. 9. . . . DTV TUNER
PG. 10. . . DEMOD

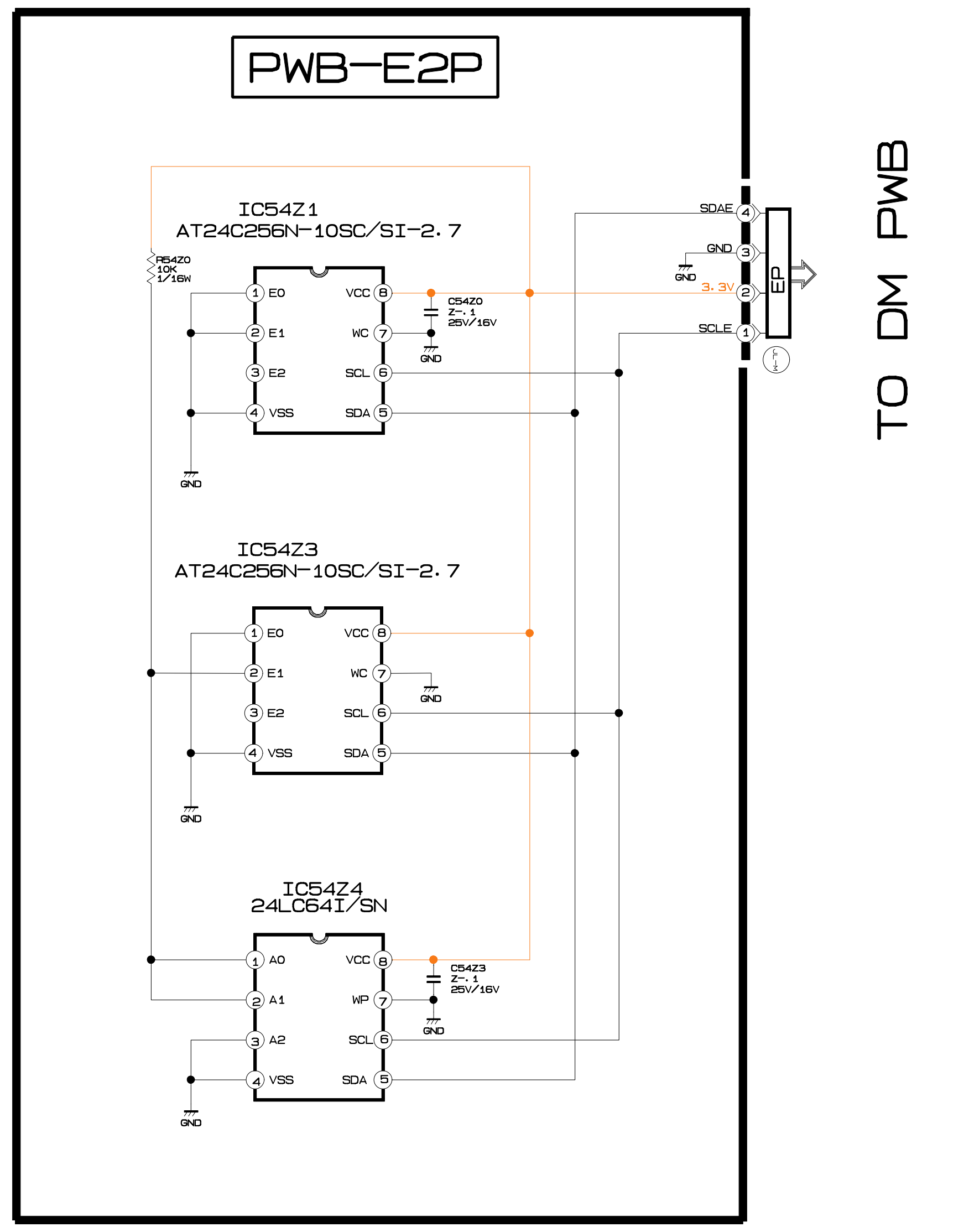
WL-82913


PWB-MLINK
J2C01
J2D01
YKF45-7002
IC2C00
MAX3223ECAP
RS-232C
TRANSCEIVER
IC2D00
SiI907B
IC2S01
CM1208-08MS
IC2D03
BA033FP
IC2D02
IRF7313
IC2D01
24LCS22AT/SN
TEST UNIT
R8P60
(*)
1/16W
R8P61
(*)
1/16W
GND
COMPONENT SIDE
FOR BOARD IDENTIFICATION
3.3V
RXD-DVI
TXD-DVI
HP_DETECT
SCL
SDA
V-DVI
H-DVI
5V-1
TO SIGNAL2
ED

PIN	DESCRIPTION
1	NO Connection
2	RXD (Receive Data)
3	TXD (Transmit Data)
4	No Connection
5	GND
6	No Connection
7	RTS
8	CTS
9	No Connection

(*)	R8P60	R8P61
V23	220	220
V23L	1K	470

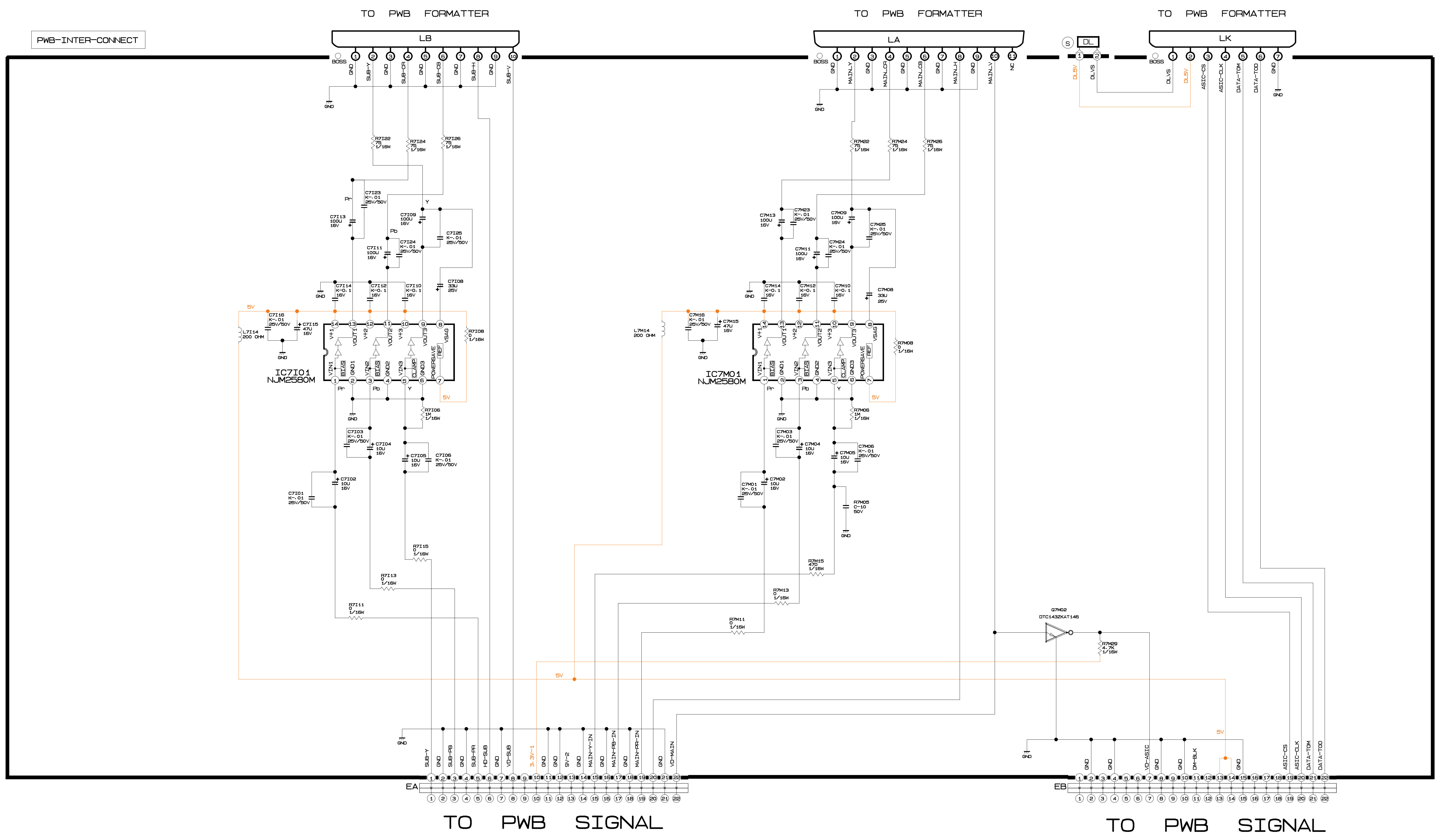
PIN	Signal Assignment
1	T.M.D.S. Data 2−
2	T.M.D.S. Data 2+
3	T.M.D.S. Data 2/4 Shield
4	T.M.D.S. Data 4−
5	T.M.D.S. Data 4+
6	DDC Clock
7	DDC Data
8	Analog Vertical Sync
9	T.M.D.S. Data 1−
10	T.M.D.S. Data 1+
11	T.M.D.S. Data 1/3 Shield
12	T.M.D.S. Data 3−
13	T.M.D.S. Data 3+
14	+5V Power
15	Ground (return for +5V, HSync and VSync)
16	Hot Plug Detect
17	T.M.D.S. Data 0−
18	T.M.D.S. Data 0+
19	T.M.D.S. Data 0/5 Shield
20	T.M.D.S. Data 5−
21	T.M.D.S. Data 5+
22	T.M.D.S. Clock Shield
23	T.M.D.S. Clock+
24	T.M.D.S. Clock−
C1	Analog Red
C2	Analog Green
C3	Analog Blue
C4	Analog Horizontal Sync
C5	Analog Ground (Analog R,G & B return)

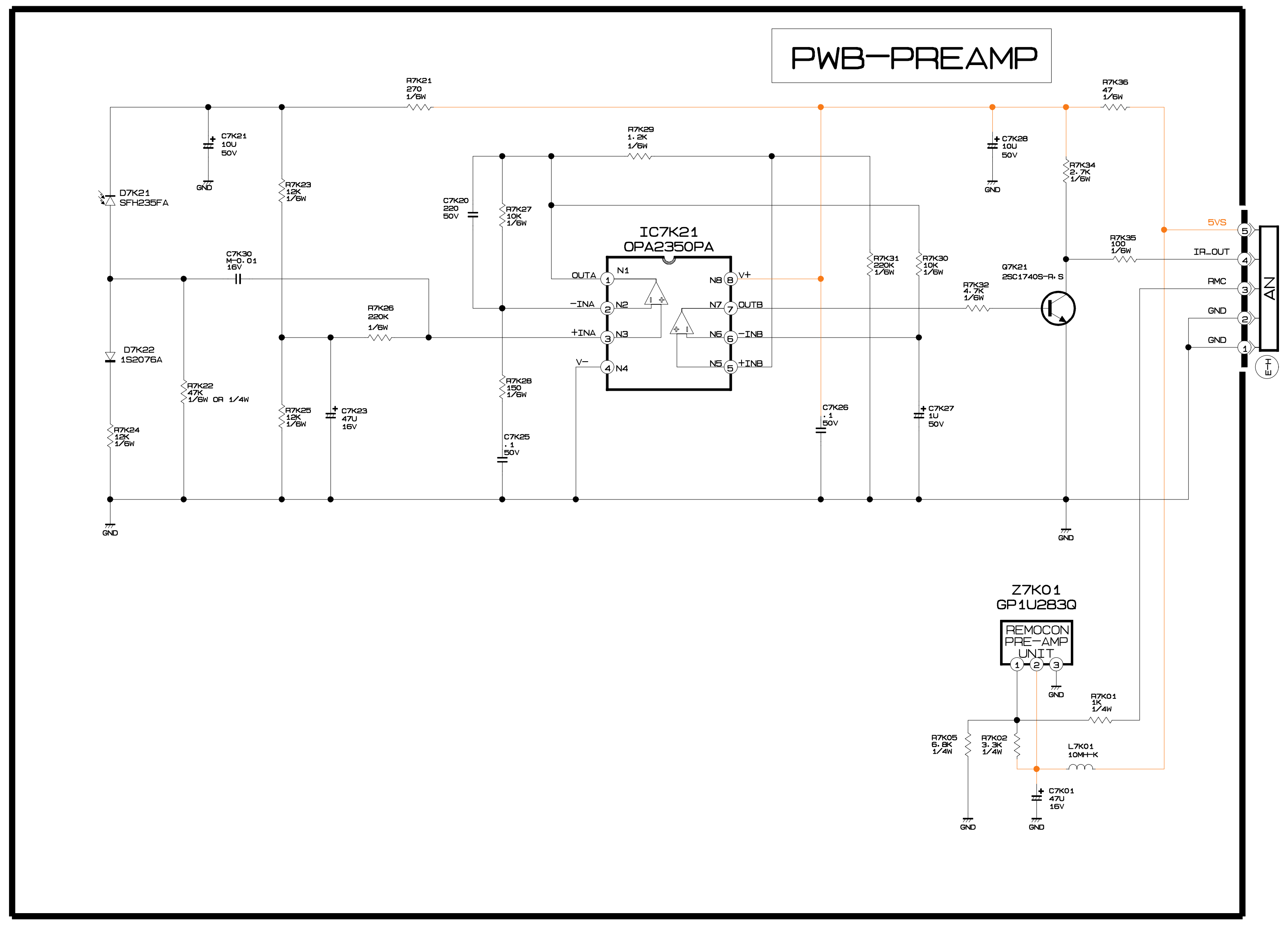

PWB-E2P
IC54Z1
AT24C256N-10SC/SI-2.7
IC54Z3
AT24C256N-10SC/SI-2.7
IC54Z4
24LC64I/SN
E2P
TO DM PWB

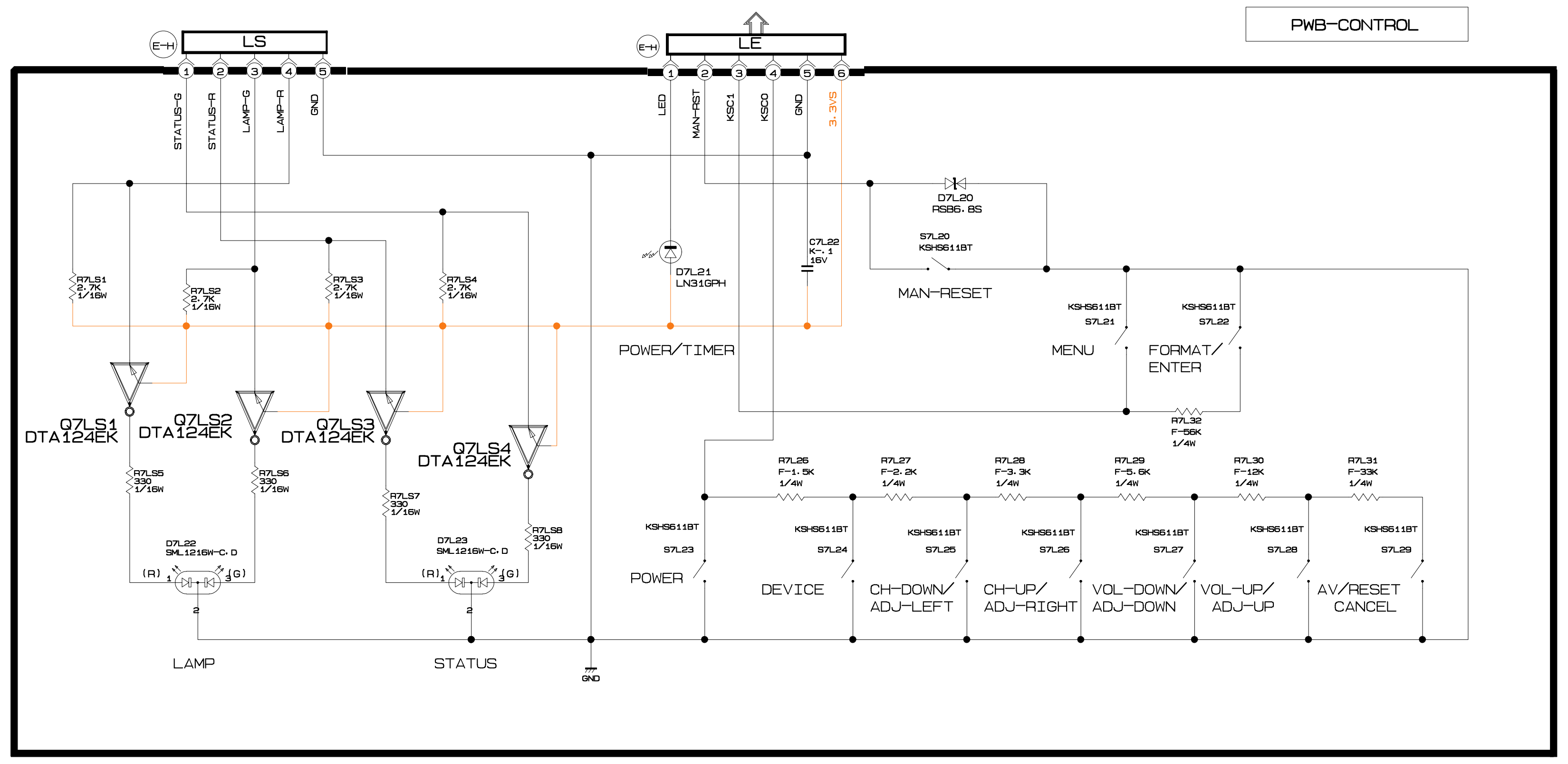
CONTENTS

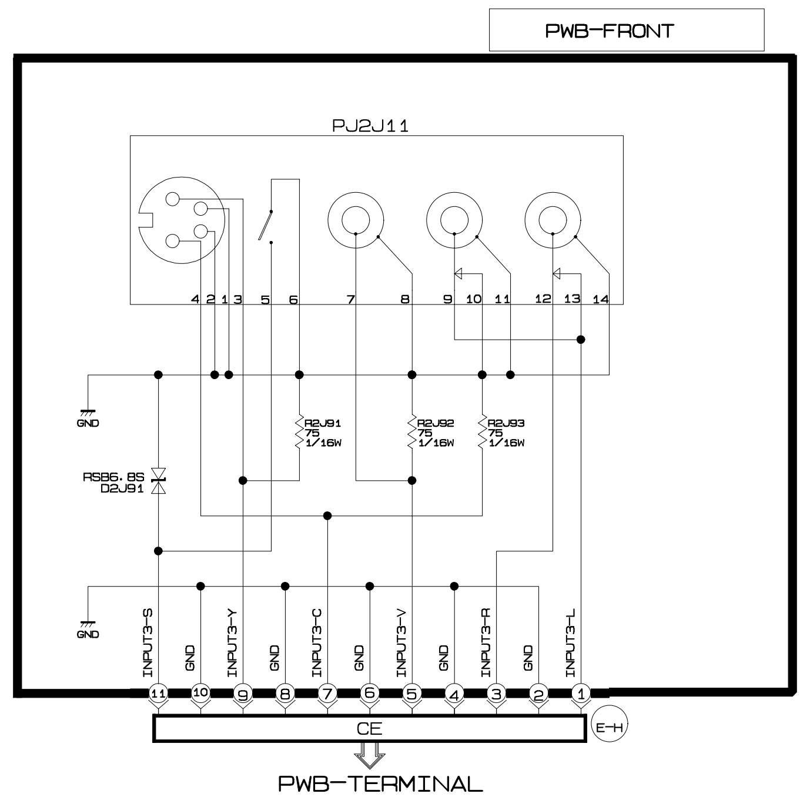
WL-82913

PG. 1....BLOCK DIAGRAM
PG. 2....POWER / SUB-POWER
PG. 3....TERMINAL 1
PG. 4....TERMINAL 2
PG. 5....SIGNAL 1 TV-MICRO
PG. 6....SIGNAL 2 AUIDO-TUNER
PG. 7....MLINK / E2P
PG. 8....PREAMP/CONTROL/
FRONT/INTER-CONNECT
PG. 9....DTV TUNER
PG. 10...DEMOD


PWB-INTER-CONNECT
TO PWB FORMATTER
LB
TO PWB FORMATTER
LA
TO PWB FORMATTER
LK
IC7101
NJM2580M
IC7M01
NJM2580M
EA
TO PWB SIGNAL
EB
TO PWB SIGNAL

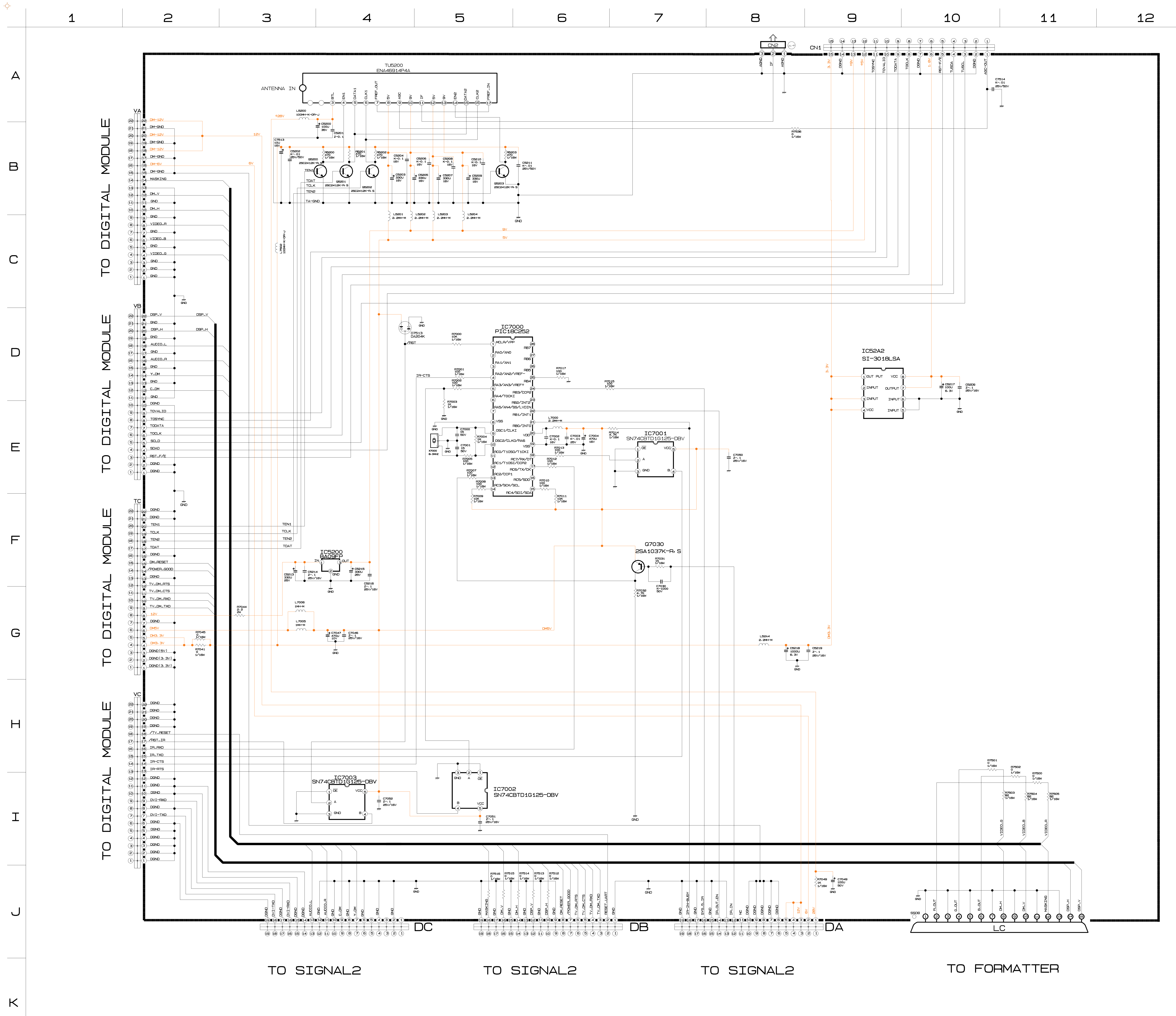

PWB-PREAMP
IC7K21
OPA2350PA
Z7K01
GP1U283Q
REMOCON PRE-AMP UNIT
AN
PWB-SIGNAL


PWB-CONTROL
LS
LE
LAMP
STATUS
POWER/TIMER
MAIN-RESET
MENU
FORMAT/ENTER
POWER
DEVICE
CH-DOWN/ADJ-LEFT
CH-UP/ADJ-RIGHT
VOL-DOWN/ADJ-DOWN
VOL-UP/ADJ-UP
AV/RESET CANCEL


PWB-FRONT
PJ2J11
CE
PWB-TERMINAL

CONTENTS WL-82913

PG. 1....BLOCK DIAGRAM
PG. 2....POWER / SUB-POWER
PG. 3....TERMINAL 1
PG. 4....TERMINAL 2
PG. 5....SIGNAL 1 TV-MICRO
PG. 6....SIGNAL 2 AUIDO-TUNER
PG. 7....MLINK / E2P
PG. 8....PREAMP/CONTROL/
FRONT/INTER-CONNECT
PG. 9....DTV TUNER
PG. 10...DEMOD


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
CN2
CN1
TU5200
ENA46914P4A
ANTENNA IN
TO DIGITAL MODULE
VA
TO DIGITAL MODULE
VB
TO DIGITAL MODULE
TC
TO DIGITAL MODULE
VC
IC7000
PIC18C252
IC52A2
SI-3018LSA
IC7001
SN74CBTD1G125-DBV
Q7030
2SA1037K-R-S
IC5200
BA03FP
IC7003
SN74CBTD1G125-DBV
IC7002
SN74CBTD1G125-DBV
DC
DB
DA
LC
TO SIGNAL2
TO SIGNAL2
TO SIGNAL2
TO FORMATTER

CONTENTS

WL-82913

PG. 1....BLOCK DIAGRAM
PG. 2....POWER / SUB-POWER
PG. 3....TERMINAL 1
PG. 4....TERMINAL 2
PG. 5....SIGNAL 1 TV-MICRO
PG. 6....SIGNAL 2 AUIDO-TUNER
PG. 7....MLINK / E2P
PG. 8....PREAMP/CONTROL/
FRONT/INTER-CONNECT
PG. 9....DTV TUNER
PG. 10...DEMOD

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
SF5200
SF5201
IC5252
UPC3217GV
IC5253
UPC3217GV
IF+
IF−
5V
9V
3.3V
1.8V
LOCK STATUS
D52A0
SML-210FT
IC52A0
BCM3510KPF P22
IC5251
LM358M
IC52A1
CY7C1019CV33-15VC
SGND
GND
IF
CN2
CN1
TO DIGITAL MODULE

CONTENTS

WL−82913

PG. 1. . . . BLOCK DIAGRAM
PG. 2. . . . POWER / SUB−POWER
PG. 3. . . . TERMINAL 1
PG. 4. . . . TERMINAL 2
PG. 5. . . . SIGNAL 1 TV−MICRO
PG. 6. . . . SIGNAL 2 AUIDO−TUNER
PG. 7. . . . MLINK / E2P
PG. 8. . . . PREAMP/CONTROL/
FRONT/INTER−CONNECT
PG. 9. . . . DTV TUNER
PG. 10. . . DEMOD